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WILDLIFE REVIEW

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Except as indicated, abstracts are by Kenneth J. Chiavetta, editor, and Rebecca M. Reynolds, editorial assistant.

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NATURAL RESOURCES & CLIMATE

Joubert, Eugene. THE PHYSIOGRAPHIC, EDAPHIC AND VEGETATIVE CHARACTERISTICS FOUND IN THE WESTERN ETOSHA NATIONAL PARK. *Madoqua*, ser. I, no. 4. p. 5-32, [13] figs., 12 pls. 1971. *WR 145: 2*
[Natur. Conserv. & Tourism Branch, South West Africa.]

SOILS

Miller, Karl H., and others. SOIL SURVEY OF ALCORN COUNTY, MISSISSIPPI. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 54 p., 7 figs. + single-fold maps based on aerial photos and bound in. Sept. 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 145: 2*

Rasmussen, Jack J., and others. SOIL SURVEY OF BENTON COUNTY AREA, WASHINGTON. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 72 p., 17 figs. + single-fold maps based on aerial photos and bound in. July 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 145: 2*

Steingraeber, J. A., and others. SOIL SURVEY OF MILWAUKEE AND WAUKESHA COUNTIES, WISCONSIN. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 177 p., 1 fig. + 6 pls. + single-fold maps based on aerial photos and bound in. Apr. 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 145: 2*

Webb, Delmar H., and others. SOIL SURVEY OF THE KOOSKIA AREA, IDAHO. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 95 p., 4 figs. + single-fold maps based on aerial photos and bound in. Oct. 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 145: 2*

GENERAL CONSERVATION

Beesley, J. S. S. SOME NOTES FROM THE ARUSHA NATIONAL PARK. *Bull. British Ornithol. Club* 91: 8-9. 1971. [From Auk 88(4), 1971.] *WR 145: 2*

Bogucka, Aleksandra. OCHRONA PRZYRODY A PLANOWANIE PRZESTRZENNE. [NATURE CONSERVATION AND COUNTRY PLANNING.] *Chrońmy Przyrodę Ojczystą* 27(5): 5-14, 4 figs. Sept.-Oct. 1971. In Polish with English summ. *WR 145: 2*

Bryan, Jack H., editor. PRESERVING WILDERNESS IN OUR NATIONAL PARKS / A PROGRAM FOR PREVENTING OVERUSE OF THE NATIONAL PARKS THROUGH REGIONAL RECREATION PLANNING OUTSIDE THE PARKS. *Nat. Parks & Conserv. Ass.* xviii + 122 p. + 42 pls. 1971. *WR 145: 2*
[1701 Eighteenth St. N.W., Washington, D.C.] An abridged version of studies made of 24 units of the National Park System. These are grouped regionally and for each the wilderness plan and regional plan are outlined.

Brykowicz, Katarzyna, Marek Czerwieniec, and Krystian Waksmundzki. AKTUALNY STAN ZAGROŻENIA TERENÓW PRAWNIE CHRONIONYCH WOJEWÓDZTWA KRAKOWDKIEGO. [LEGALLY PROTECTED AREAS IN THE PROVINCE OF CRACOW ARE ENDANGERED. PRESENT STATE.] *Chrońmy Przyrodę Ojczystą* 27(4): 15-31, 4 figs. July-Aug. 1971. In Polish with English summ. *WR 145: 3*

IUCN International Commission on National Parks. UNITED NATIONS LIST OF NATIONAL PARKS AND EQUIVALENT RESERVES. *IUCN Int. Comm. Nat. Parks.* 601 p. + plates. 1971. Also available in French. *WR 145: 3*

Lists 1,204 National Parks and equivalent reserves in 140 countries. Five main headings describe the parks of each country. I. Parks are listed in order of size and their backgrounds are given. II. Application of the basic criteria for national park status is reviewed and exceptions noted. III. Year established, tourism, and scientific research in the area. IV. Ecosystems are described including geographical and geological features, fauna, and species from IUCN "Red Data Book." V. Potential areas in countries in which no areas can yet be listed are described.

Nielsen, Viggo. OCHRONA PRZYRODY W DANII. [NATURE CONSERVATION IN DENMARK.] *Chrońmy Przyrodę Ojczystą* 26(3): 26-36, 4 figs. May-June 1970. In Polish with English summ. *WR 145: 3*

Nowak, Jan. "WIŚLISKO KOBYLE"--NOWY REZERWAT W WOJEWÓDZTWIE KRAKOWSKIM. ["WIŚLISKO-KOBYLE"--A NEW NATURE RESERVE IN THE PROVINCE OF CRACOW.] *Chrońmy Przyrodę Ojczystą* 27(4): 49-50, 1 fig. July-Aug. 1971. In Polish. *WR 145: 3*

Piórecki, Jerzy. REGIONALNA SIEĆ REZERWATÓW PRZYRODY OKOLIC PRZEMYŚLA. [A REGIONAL NETWORK OF NATURE RESERVES IN THE ENVIRONS OF PRZEMYŚL.] *Chrońmy Przyrodę Ojczystą* 25(6): 38-45, 4 figs. Nov.-Dec. 1969. In Polish with English summ. *WR 145: 3*

Riabinin, Sergiusz. OGÓLNE ZAGADNIENIA OCHRONY PRZYRODY W WYKŁADACH UNIWERSYTECKICH. [GENERAL PROBLEMS OF NATURE CONSERVATION IN UNIVERSITY COURSES.] *Chrońmy Przyrodę Ojczystą* 27(3): 5-12. May-June 1971. In Polish with English summ. *WR 145: 3*

Sokołowski, Aleksander W. REZERWAT BUKOWA GÓRA KOŁO LUBANIA ŚLĄSKIEGO. [THE BUKOWA GÓRA NATURE RESERVE NEAR LUBAŃ ŚLĄSKI.] *Chrońmy Przyrodę Ojczystą* 26(5): 50-53, 2 figs. Sept.-Oct. 1970. In Polish. *WR 145: 3*

Waksmundzki, Krystian. O HUMANITARNYCH I MORALNYCH ASPEKTACH OCHRONY PRZYRODY I JEJ ZASOBÓW. [ON THE HUMANE AND MORAL ASPECTS OF THE CONSERVATION OF NATURE AND NATURAL RESOURCES.] *Chrońmy Przyrodę Ojczystą* 26(3): 5-11. May-June 1970. In Polish with English summ. *WR 145: 3*

Zabierowski, Kazimierz. OCHRONA ŚRODOWISKA PRZYRODNICZEGO KONIECZNOŚCIA ŻYCIOWA CZŁOWIEKA. [PROTECTION OF THE NATURAL ENVIRONMENT--MAN'S VITAL NEED.] *Chrońmy Przyrodę Ojczystą* 27(4): 5-14, 3 figs. July-Aug. 1971. In Polish with English summ. *WR 145: 3*

BIBLIOGRAPHIES, DIRECTORIES, BIOGRAPHY, HISTORY

Behle, William H. IN MEMORIAM: JEAN MYRON LINSDALE. *Auk* 88(4): 760-774, 1 pl. Oct. 1971. *WR 145: 3*

[Univ. Utah, Salt Lake City.] Linsdale was, for 33 years, a research associate at the Museum of Vertebrate Zoology at the University of California. Includes a selected bibliography for the period 1927-1957.--Courtesy/ Paul A. Stewart.

Field, Henry, and Edith M. Laird, editors. CONSERVATION AND WILDLIFE: BIBLIOGRAPHY VI. *Field Res. Projects.* i + 21 p. 1971. Available from Field Res. Projects, Coconut Grove, Miami, Fla. *WR 145: 4*
Contains material supplementary to Bibliography V.

Folk, Čestmír. PŘEHLED LITERÁRNÍ TVORBY J. KRATOCHVÍLA. [REVIEW OF LITERATURE BY J. KRATOCHVÍL.] *Vertebr. Zprávy* 1969(1): 9-17. 1969. In Czech. *WR 145: 4*
Bibliography of 300 papers by Josef Krato Kratochvíl.

Harrison, Bi N., and Jack C. von Bloeker, Jr. IN MEMORIAM: JOHN ROY PEMBERTON. *Auk* 89(1): 130-138, 1 pl. Jan. 1972. *WR 145: 4*
[Western Foundation Vertebr. Zool., 1100 Glendon Ave., Los Angeles, Calif.] Mr. Pemberton was a California-based petroleum geologist with ornithology as an avocation, and he made substantial contributions to the advancement of ornithology. Includes a bibliography of his papers spanning the period 1902-1952.—Courtesy/ Paul A. Stewart.

Havlíková, Jarmila. NÁVRH NA MECHANIZACI INFORMAČNÍHO SYSTÉMU BIOLOGICKÉHO PRACOVIŠTĚ. [PROPOSAL FOR THE REPROCESSING OF SCIENTIFIC INFORMATION IN THE BIOLOGICAL RESEARCH.] *Vertebr. Zprávy* 1969(1): 21-34, 9 figs. 1969. In Czech with English summ. *WR 145: 4*
Proposals for the reprocessing of scientific information in the vertebrate research, namely of literature data and data for taxonomic and ecological mammal and bird research, are presented. The mechanizing devices and means: the punched machine card with 90 columns and the ARITMA mechanical number analyzer—type 200. Codes for mammalogy, ornithology, ichthyology and morphology were devised.—From summ.

Havlíková, Jarmila, Karel Hudec, and Ivana Toušková. ČESKOSLOVENSKÁ ORNITOLOGICKÁ BIBLIOGRAFIE 1965-1966 A DOPLŇKY ZA R. 1961-1964. [CZECHOSLOVAK ORNITHOLOGICAL BIBLIOGRAPHY 1965-1966 AND SUPPLEMENTS IN 1961-1964.] *Vertebr. Zprávy* 1969(3): 101-115. 1969. In Czech with English summ. *WR 145: 4*
List of 422 titles.

Hillbright-Ilkowska, Anna, Jadwiga Luczak, Eliza Prot, and Irena Spodniewska. POLISH ECOLOGICAL BIBLIOGRAPHY FOR 1966. *Polish Acad. Sci. Ecol. Committee, Inst. Ecol.* (Warsaw, Poland). 267 p. Dec. 1970. *WR 145: 4*
Contains 607 citations listed alphabetically and classified by topic.

Jezierska, Teresa, and others. BIBLIOGRAPHY OF POLISH PUBLICATIONS ON WILDLIFE BIOLOGY AND GAME MANAGEMENT COVERING YEARS 1945-1970. *Inst. Ecol. Polish Acad. Sci., Polish Hunting Ass.* (Warsaw, Poland). 308 p. 1971. *WR 145: 4*
A bibliography of 1203 titles including a subject index, index of game animals, and index of authors. Short summaries of some publications are included.

Laird, Edith M., editor. CONSERVATION AND WILDLIFE: BIBLIOGRAPHY V, PART 1. *Field Res. Projects.* xi + 167 p. 1971. Available from Field Res. Projects, Coconut Grove, Miami, Fla. *WR 145: 4*
"Last" volume of the series.

Laird, Edith M., editor. CONSERVATION AND WILDLIFE: BIBLIOGRAPHY V, PART 2. *Field Res. Projects.* iii + 239 p. 1971. Available from Field Res. Projects, Coconut Grove, Miami, Fla. *WR 145: 4*
"Last" volume of the series.

Trefethen, James B., compiler. A FORTY-YEAR CUMULATIVE INDEX OF THE TRANSACTIONS OF THE NORTH AMERICAN WILDLIFE AND NATURAL RESOURCES CONFERENCE / VOLUMES 1-34 AND THE PROCEEDINGS OF THE AMERICAN GAME CONFERENCE / VOLUMES 15-21. *Wildl. Mgmt. Inst.* 203 p. 1970. Available from Wildlife Management Institute, 709 Wire Bldg., Washington, D.C. 20005, at $2.75 postpaid. *WR 145: 4*

PLANTS--FLORAS, COMMUNITIES, TAXONOMY

Carlson, Richard A., and John B. Moyle. KEY TO THE COMMON AQUATIC PLANTS OF MINNESOTA. *Minn. Dep. Conserv. Div. Game & Fish Sect. Tech. Serv. Spec. Publ.* no. 53. 64 p., illus. May 1968. *WR 145: 5*

"This key is a reprint of the original printed in *The Aquatic and Marsh Vegetation of Minnesota and its Value to Waterfowl* by John B. Moyle and Neil Hotchkiss, Minnesota Department of Conservation, Technical Bulletin No. 3 [*WR 144: 30*] as modified to conform with the Eighth Edition of Gray's Manual of Botany."

WILDLIFE--BIOTAS, ECOLOGY, NATURAL HISTORY

Horrobin, David F. A GUIDE TO KENYA AND NORTHERN TANZANIA. *Charles Scribner's Sons* (New York). iv + 304 p., illus., 6 x 8.5 in. 1971. Price $10.00. *WR 145: 5*

This guide "is full of practical information about climate, health, hotels and travel. It describes briefly the history, geography and peoples of the area. It describes all the places which the local resident or visitor will want to see, some of which are internationally famous and many others of which deserve to be so famed but are at present known only to a few. It describes all the animals which are likely to be seen and gives an introduction to knowledge of other forms of wild-life, such as birds, snakes, insects and flowers. Finally a comprehensive further reading list guides the person with a special interest to those books where he can find the information he requires."

Robinson, P. T. WILDLIFE TRENDS IN LIBERIA AND SIERRA LEONE. *Oryx* 11(2-3): 117-122. Sept. 1971. *WR 145: 5*

[Mich. State Univ., East Lansing.] Assessment of the status, and the danger to, animals in Liberia and Sierra Leone.

WILDLIFE--NATURE PROTECTION & RARE & EXTINCT SPECIES

Leach, Howard R., and Leonard O. Fisk. AT THE CROSSROADS / A REPORT ON CALIFORNIA'S ENDANGERED AND RARE FISH AND WILDLIFE. *Calif. Dep. Fish & Game.* vi + 99 p., illus. Jan. 1972. *WR 145: 5*

[Calif. Dep. Fish & Game, Sacramento.] Description, distribution, status, protective measures taken, recommendations and references for the 19 spp. or sspp. of wildlife considered endangered in California and the 24 forms considered rare. Photographs and maps for each bird, mammal, fish, reptile or amphibian discussed are included.

Smith, F. R., and the Rarities Committee. REPORT ON RARE BIRDS IN GREAT BRITAIN IN 1970 (WITH 1960, 1966, 1968 AND 1969 ADDITIONS). *British Birds* 64 (8): 339-371 + 8 pls. Aug. 1971. *WR 145: 5*

[117 Hill Barton Rd., Exeter, Devon, England.] Thirteenth annual report of the Rarities Committee.

Walkinshaw, Lawrence H. KIRTLAND'S WARBLER--ENDANGERED. *Amer. Birds* 26(1): 3-9, illus. Feb. 1972. *WR 145: 5*

[915 N. Onondaga Road, Holt, Mich.] *"Dendroica kirtlandii."* Includes data on nesting for the period 1931-1971.

WILDLIFE--POLLUTION

Barber, Thomas Amos. INFLUENCE OF PESTICIDES ON MULE DEER RUMEN BACTERIA. *Ph.D. thesis, Colo. State Univ.* 73 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(8), 1972.] *WR 145: 5*

A total of nineteen pesticides, most of which were representative of widely used classes of fungicides, herbicides, and insecticides, were tested for inhibitory activity toward mule deer *(Odocoileus hemionus)* rumen bacteria.

Blus, Lawrence J., Robert G. Heath, Charles D. Gish, Andre A. Belisle, and Richard M. Prouty. EGGSHELL THINNING IN THE BROWN PELICAN: IMPLICATION OF DDE. *BioScience* 21(24): 1213-1215. 15 Dec. 1971. *WR 145: 6*

[Patuxent Wildl. Res. Center, Laurel, Md.] "We consider the brown pelican [*Pelecanus occidentalis*] to be extremely susceptible to DDE-induced eggshell thinning."

Canadian Wildlife Service. PESTICIDES AND WILDLIFE. *Canadian Wildl. Serv.* 24 p., illus. 1971. Available in French and in English. *WR 145: 6*

Contents: *Forward*, J. S. Tener; *Pesticides and wildlife*, Richard Fyfe; *Toxic chemical research by the Canadian Wildlife Service*, J. A. Keith; and *Some results and implications of CWS pesticide research*, J. A. Keith.

Cecil, Helene C., George F. Fries, Joel Bitman, Susan J. Harris, R. J. Lillie, and C. A. Denton. DIETARY p,p'-DDT, o,p'-DDT OR p,p'-DDE AND CHANGES IN EGG SHELL CHARACTERISTICS AND PESTICIDE ACCUMULATION IN EGG CONTENTS AND BODY FAT OF CAGED WHITE LEGHORNS. *Poultry Sci.* 51(1): 130-139, 11 figs. Jan. 1972. *WR 145: 6*

[U. S. Dep. Agr., Beltsville, Md.]

Davison, K. L., and J. L. Sell. DIELDRIN AND p,p'-DDT EFFECTS ON EGG PRODUCTION AND EGGSHELL THICKNESS OF CHICKENS. *Bull. Environ. Contamination & Toxicol.* 7(1): 9-18, 2 figs. Jan. 1972. *WR 145: 6*

[USDA Metabolism & Radiation Res. Lab., Fargo, N. Dak.]

Hays, Helen, and Robert W. Risebrough. POLLUTANT CONCENTRATIONS IN ABNORMAL YOUNG TERNS FROM LONG ISLAND SOUND. *Auk* 89(1): 19-35, 8 figs. Jan. 1972. *WR 145: 6*

[Amer. Mus. Natur. Hist., New York, N.Y.] In 1969, 0.1% of the young common and roseate terns *(Sterna hirundo* and *S. dougallii)* hatched with abnormalities, and in 1970, 1.7% hatched in this condition. The abnormalities resembled those produced in chickens under experimental conditions by the chlorinated dibenzo-p-dioxins and some preparations of the polychlorinated biphenyls. Data are given for many of these birds on organ concentrations of DDT, PCB, and some of their metabolic derivatives.--From summ. Courtesy/ Paul A. Stewart.

Jefferies, D. J., and M. C. French. THE EFFECT OF pp'-DDT ON THE RATE, AMPLITUDE AND WEIGHT OF THE HEART OF THE PIGEON AND BENGALESE FINCH. *British Poult. Sci.* 12(3): 387-399, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 6*

[Monks Wood Exp. Sta., Huntingdon, England.]

Jefferies, D. J., and M. C. French. CHANGES INDUCED IN THE PIGEON THYROID BY p,p'-DDE AND DIELDRIN. *J. Wildl. Mgmt.* 36(1): 24-30. Jan. 1972. *WR 145: 6*

[Monks Wood Exp. Sta., Huntingdon, England.] Abstract: Small groups of pigeons *(Columba livia)* were fed dieldrin and p,p'-DDE, each at three dose rates, for a period of 56 days. The thyroids of these birds increased in weight and showed considerable loss of colloid from the follicles associated with hyperplastic epithelia, when compared with those of the controls. These changes are similar to those obtained by feeding p,p'-DDT to pigeons and can indicate a hyper- or hypofunctioning gland. Further research with p,p'-DDT showed that pigeons were hyperthyroid at low dose rates and hypothyroid at high dose rates. It is possible that the production of hypothyroidism in some wild bird species may be one of the mechanisms responsible for thinner eggshells reported in these species. In addition to the effect on the thyroid, increased liver and adrenal weights and decreased heart weights were found in the birds fed DDE. These reactions are similar to those previously reported for pigeons fed sublethal doses of DDT. The birds dosed with dieldrin, on the other hand, showed no obvious comparable changes in organ weights. The unexpected mortality in the birds fed DDE supported the suggestion that pigeons may be more sensitive to DDE than to DDT.

Kleinert, Stanton J., and Paul E. Degurse. MERCURY LEVELS IN WISCONSIN FISH AND WILDLIFE. *Wis. Dep. Natur. Resour. Tech. Bull.* no. 52. 22 p., illus. 1972. *WR 145: 7*

Mercury determinations were made on 234 wildlife muscle samples and 220 wildlife liver samples. The common game species were sampled including deer, rabbits, squirrels, ruffed grouse, pheasants, puddle ducks, diving ducks and geese. Swans, pied-bill grebes, and blue herons were also sampled. Mercury levels in muscle and liver tissue of most Wisconsin wildlife was well below 0.5 ppm. Water birds, including waterfowl, contained more mercury than mammals or upland game birds. Livers of diving ducks, herons, and grebes approached or exceeded 0.5 ppm. No geographic locations were noted where mercury seemed to be more concentrated in wildlife.--From abstr.

Lillie, R. J., C. A. Denton, H. C. Cecil, J. Bitman, and G. F. Fries. EFFECT OF p,p'-DDT, o,p'-DDT AND p,p'-DDE ON THE REPRODUCTIVE PERFORMANCE OF CAGED WHITE LEGHORNS. *Poultry Sci.* 51(1): 122-129. Jan. 1972. *WR 145: 7*

[U.S. Dep. Agr., Beltsville, Md.]

Malecki, Richard A. DIELDRIN: ITS LONG TERM EFFECTS ON COTTONTAIL REPRODUCTION. *Ph.D. thesis, Univ. Mo.* 73 p. Dec. 1971. *WR 145: 7*

There is no evidence of significant reproductive inhibition associated with the sub-lethal amounts of dieldrin tested on the cottontail rabbit, *Sylvilagus floridanus.*

Pajor, Wiktor J. MODYFIKACJA METOD ZWALCZANIA "ZARAZY OLIWNEJ" U PTAKÓW. [THE METHODS IN OIL POLLUTION CONTROL WITH RESPECT TO BIRDS UNDERWENT MODIFICATION.] *Chrońmy Przyrodę Ojczystą* 26(6): 39-40. Nov.-Dec. 1970. In Polish. *WR 145: 7*

Pomarnacki, Leopold. PTAKI A ŚRODKI OWADOBÓJCZE. [BIRDS AND INSECTICIDES.] *Chrońmy Przyrodę Ojczystą* 25(6): 53-54. Nov.-Dec. 1969. In Polish. *WR 145: 7*

Segda, Stefania. ZGUBNY WPŁYW NADMIERNEGO STOSOWANIA PESTYCYDÓW NA ŚRODOWISKO PRZYRODNICZE CZŁOWIEKA. [THE NOXIOUS INFLUENCE OF AN EXCESSIVE USE OF PESTICIDES ON MAN'S NATURAL ENVIRONMENT.] *Chrońmy Przyrodę Ojczystą* 27(1): 5-16, 3 figs. Jan.-Feb. 1971. In Polish with English summ. *WR 145: 7*

Seidensticker, John C. IV, and Harry V. Reynolds III. THE NESTING, REPRODUCTIVE PERFORMANCE, AND CHLORINATED HYDROCARBON RESIDUES IN THE RED-TAILED HAWK AND GREAT HORNED OWL IN SOUTH-CENTRAL MONTANA. *Wilson Bull.* 83(4): 408-418. Dec. 1971. *WR 145: 7*

[Idaho Coop. Wildl. Res. Unit, Moscow.] Nesting success for red-tailed hawks *(Buteo jamaicensis)* was 50%, and for great horned owls *(Bubo virginianus)* it was 64%. All tissues and eggs contained relatively low levels of DDE, DDT, DDD, and dieldrin. Eggs contained PCBs. The great horned owl eggs did not have thin shells, but red-tailed hawk eggs had thin shells.--Courtesy/ Paul A. Stewart.

Siegfried, W. R. THE REACTIONS OF CERTAIN BIRDS TO RODENT BAITS TREATED WITH ZINC PHOSPHIDE. *Ostrich* 39(3): 197-198. Sept. 1968. *WR 145: 7*

[Percy FitzPatrick Inst., Cape Town, South Africa.]

Temple, Stanley A. CHLORINATED HYDROCARBON RESIDUES AND REPRODUCTIVE SUCCESS IN EASTERN NORTH AMERICAN MERLINS. *Condor* 74(1): 105-106. Spring 1972. *WR 145: 7*

[Cornell Univ., Ithaca, N.Y.] "Breeding merlins [*Falco columbarius*] in Newfoundland now carry deleterious levels of DDE in their bodies, lay thinner shelled eggs, and produce young at a rate lower than in pre-pesticide times."

Vermeer, K., and F. A. J. Armstrong. MERCURY IN CANADIAN PRAIRIE DUCKS. *J. Wildl. Mgmt.* 36(1): 179-182. Jan. 1972. *WR 145: 7*

[Canadian Wildl. Serv., Edmonton, Alberta, Canada.] Abstract: Tissues of 190 ducks, shot on the Canadian prairie during the hunting seasons of 1969 and 1970, were analyzed for mercury residues. Residue levels of over 0.5 ppm were

found only in breast muscle of common mergansers *(Mergus merganser)*. Livers contained, on the average, 2.9 times as much mercury as breast muscles. Primary feathers contained, on the average, 12 times as much mercury as breast muscles of adult pintails *(Anas acuta)* and 22 times as much mercury as those of immature pintails. Mercury levels in primaries correlated with those in muscles for adults but not with those of immature ducks.

Willoughby, Ernest J. DRINKING RESPONSES OF THE RED CROSSBILL *(LOXIA CURVIROSTRA)* TO SOLUTIONS OF NaCl, $MgCl_2$, AND $CaCl_2$. *Auk* 88(4): 828-838, 3 figs. Oct. 1971. *WR 145: 8*

[McKendree Coll., Lebanon, Ill.] Crossbills reduced their fluid intake with increase in concentration of available salt solutions and chose distilled water over salt solutions. The highest concentrations of $CaCl_2$ and $MgCl_2$ which birds could drink and still maintain weight were between 107 and 125 mM, respectively. They maintained weight when drinking NaCl concentrations in excess of 175 mM.—Courtesy/ Paul A. Stewart.

Zitko, V., and P. M. K. Choi. PCB AND p,p'-DDE IN EGGS OF CORMORANTS, GULLS, AND DUCKS FROM THE BAY OF FUNDY, CANADA. *Bull. Environ. Contamination & Toxicol.* 7(1): 63-64. Jan. 1972. *WR 145: 8*

[Fisheries Res. Board Canada, St. Andrews, New Brunswick, Canada.] "Relatively high levels of PCB and p,p'-DDE were found in eggs of double-crested cormorants *(Phalacrocorax auritus)*, herring gulls *(Larus argentatus)*, and black ducks *(Anas rubripes)*, from Fatpot Island (The Wolves, Bay of Fundy) and from Hospital Island (Passamaquoddy Bay, New Brunswick), collected in May 1971."

WILDLIFE—PARASITES & DISEASES

Edman, J. D., and H. W. Kale II. HOST BEHAVIOR: ITS INFLUENCE OF FEEDING SUCCESS OF MOSQUITOES. *Ann. Entomol. Soc. Amer.* 64: 513-516. 1971. [From Auk 88(4), 1971.] *WR 145: 8*

Hardy, J. L., R. N. Lyness, and W. A. Rush. EXPERIMENTAL VECTOR AND WILDLIFE HOST RANGES OF BUTTONWILLOW VIRUS IN KERN COUNTY, CALIFORNIA. *Amer. J. Trop. Med. Hyg.* 21(1): 100-109. Jan. 1972. *WR 145: 8*

[Univ. Calif., Berkeley.] *Lepus californicus, Sylvilagus auduboni, Ammospermophilus nelsoni, Citellus beecheyi, Dipodomys nitratoides, Peromyscus maniculatus*, tricolored blackbird, house finch, house sparrow, mourning dove, and Gambel's white-crowned sparrow.

Hilton, D. F. J. A TECHNIQUE FOR COLLECTING ECTOPARASITES FROM SMALL BIRDS AND MAMMALS. *Canadian J. Zool.* 48: 1445-1446. 1970. [From Auk 89(1), 1972.] *WR 145: 8*

Mozgovoi, A. A. ASCARIDATA OF ANIMALS AND MAN AND THE DISEASES CAUSED BY THEM. PART 1. *Published for the U.S. Department of Agriculture and the National Science Foundation, Washington, D.C., by the Israel Program for Scientific Translations* (Jerusalem). TT 66-51141. x + 390 p., 191 figs. 1968. Russian original "Essentials of Nematodology" by the Academy of Sciences of the USSR in 1953. [Translation available from the U.S. Dep. Commerce, Clearinghouse for Federal Scientific and Technical Information, Springfield, Va.] *WR 145: 8*

Petrochenko, V. I. ACANTHOCEPHALA OF DOMESTIC AND WILD ANIMALS. Vol. I. *Published for the U.S. Department of Agriculture and the National Science Foundation, Washington, D.C., by the Israel Program for Scientific Translations* (Jerusalem). TT 70-50165. vii + 465 p., 182 figs. 1971. Russian original by the Academy of Sciences of the USSR in 1956. [Translation available from U.S. Dep. Commerce, National Technical Information Service, Springfield, Va.] *WR 145: 8*

Deals with general problems of anatomy, biology, phylogeny and evolution, and the taxonomy of Acanthocephala up to and including the species that parasitize

fish, amphibians and reptiles, i.e., Acanthocephala of the families Neoechinorhynchidae, Hebesomidae, Tenuisentidae, Acanthogyridae, Quadrigyridae, Echinorhynchidae, Fessisentidae, Cavisomatidae, Pomphorhynchidae, Arhythmacanthidae, and Rhadinorhynchidae.--From preface.

Petrochenko, V. I. ACANTHOCEPHALA OF DOMESTIC AND WILD ANIMALS. Vol. II. *Published for the U.S. Department of Agriculture and the National Science Foundation, Washington, D.C., by the Israel Program for Scientific Translations* (Jerusalem). TT 70-50166. iv + 478 p., 178 figs. 1971. Russian original by the Academy of Sciences of the USSR in 1958. [Translation available from U.S. Dep. Commerce, National Technical Information Service, Springfield, Va.] *WR 145: 9*

Includes the descriptions of Acanthocephala parasitizing birds and mammals as well as four species that, although parasitizing amphibians, are taxonomically close to Acanthocephala of birds and mammals. Some species of Acanthocephala of birds and mammals cause serious diseases among farm animals. Three of these diseases -- polymorphiasis of ducks, filicolliasis of ducks and macracanthorhynchiasis of pigs -- are therefore included. Also included is an analysis of the zoogeographical distribution of the species of Acanthocephala, a systematic list of hosts -- not only definitive, as was the case in the first volume, but also the intermediate and reservoir -- with references to species parasitizing the corresponding host, and index of the genera and species of Acanthocephala, and bibliographies.--From preface.

Scherer, W. F., J. V. Ordonez, P. B. Jahrling, B. A. Pancake, and R. W. Dickerman. OBSERVATIONS OF EQUINES, HUMANS AND DOMESTIC AND WILD VERTEBRATES DURING THE 1969 EQUINE EPIZOOTIC AND EPIDEMIC OF VENEZUELAN ENCEPHALITIS IN GUATEMALA. *Amer. J. Epidemiol.* 95(3): 255-266, 1 fig. Mar. 1972. *WR 145: 9*

[Cornell Univ. Med. Coll., New York, N.Y.] Postepizootic sera from dogs and cattle contained VE virus hemaglutination inhibition (HI) and neutralization (N) antibodies, and a few sera from pigs and bats, but none from domestic fowl, wild birds or rodents had HI antibodies. Since no outbreaks of disease occurred in these animals during the epizootic, the possibility that some of them might have been silent amplifiers of VE virus was considered.--From abstr.

Skrjabin, K. I. TREMATODES OF ANIMALS AND MAN / ESSENTIALS OF TREMATODOLOGY. Vol. XVII. *Published for the U.S. Department of the Interior and the National Science Foundation, Washington, D.C., by the Israel Program for Scientific Translations* (Jerusalem). OTS 63-11128. 444 p., 207 figs. 1964. Russian original by the Academy of Sciences of the USSR in 1956. [Translation available from the Office of Technical Services, U.S. Dep. Commerce, Washington, D.C.] *WR 145: 9*

WILDLIFE--POPULATIONS & FLUCTUATIONS

Watson, Adam, editor. ANIMAL POPULATIONS IN RELATION TO THEIR FOOD RESOURCES / A SYMPOSIUM OF THE BRITISH ECOLOGICAL SOCIETY / ABERDEEN / 24-28 MARCH 1969. *Blackwell Sci. Publ.* (Oxford & Edinburgh). xx + 477 p., illus. 1970. Price $17.50. *WR 145: 9*

The following papers are of special interest to wildlifers: *Food selection by North American deer and their response to over-utilization of preferred plant species*, D. R. Klein; *Selection of food by Icelandic ptarmigan in relation to its availability and nutritive value*, A. Gardarsson and R. Moss; *Factors affecting the diet and feeding rate of the redshank* (Tringa totanus), J. D. Goss-Custard; *The use of the herb layer by grazing ungulates in the Serengeti*, R. H. V. Bell; *Dominance, spacing behaviour and aggression in relation to population limitation in vertebrates*, A. Watson and R. Moss; *Food fighting in rooks*, I. J. Patterson; *Differences in population density, territoriality and food supply of dunlin on arctic and subarctic tundra*, R. T. Holmes; *Responses of red grouse populations to experimental improvement of their food*, G. R. Miller,

A. Watson, and D. Jenkins; *Irruptions of crossbills in Europe*, I. Newton; *Interactions between populations of spotted hyaenas* (Crocuta crocuta *Erxleben*) *and their prey species*, H. Kruuk; *The concept of energy flow applied to a woodland community*, G. C. Varley; and *Feedback from food resources to population regulation*, V. C. Wynne-Edwards.

WILDLIFE--BIOMETRICS

Goldstein, Robert A., and Jerry W. Elwood. A TWO-COMPARTMENT, THREE-PARAMETER MODEL FOR THE ABSORPTION AND RETENTION OF INGESTED ELEMENTS BY ANIMALS. *Ecology* 52(5): 935-939, 3 figs. Late Summer 1971. *WR 146: 10*

[Oak Ridge Nat. Lab., Oak Ridge, Tenn.] Abstract: In many experiments on the absorption and retention of ingested elements, the measured retention curve is fitted to the sum of two exponential functions. The model used most often to interpret results assumes that the instantaneous rate of absorption of an element is proportional to its instantaneous rate of ingestion. The authors propose instead a model that assumes the instantaneous rate of absorption is proportional to the amount of unabsorbed element in the gut. The models lead to different interpretations of the parameters of the retention curve and to different functional descriptions of the accumulation of absorbed element in the body. Data are presented to support the authors' proposed model over the commonly used model. Since both models are of equal mathematical complexity, there is no justification for favoring the commonly used model. Suggestions are made about how modeling should be incorporated into ecological studies. Models based on meaningful and testable hypotheses should be formulated prior to data collection. --Courtesy/ Paul A. Stewart.

WILDLIFE--TECHNIQUES

Balgooyen, Thomas G. A SENSITIVE, REPEATING RECORDING DEVICE. *J. Wildl. Mgmt.* 36(1): 195-196. Jan. 1972. *WR 146: 10*

[Univ. Calif., Berkeley.] Abstract: By placing one magnet on the back of a flat treadle that was hinged to a base and another magnet arranged in polar opposition to the first, a sensitive, repeating treadle is achieved.

Lewin, Victor. A SIMPLE DEVICE FOR MEASURING EGGSHELL THICKNESS. *Canadian Field-Natur.* 84(3): 305, 2 figs. 1970. *WR 146: 10*

[Univ. Alberta, Edmonton, Alberta, Canada.] Abstract: A direct reading dial thickness micrometer with parallel anvils was modified by the addition of a device consisting of a ball bearing mounted on a brass cap which was then fitted over the lower anvil thus enabling the thickness of a curved object to be measured to the nearest 0.01 mm.

Patric, Earl F., and Raymond W. Serenbetz. A NEW APPROACH TO WILDLIFE POSITION FINDING TELEMETRY. *N.Y. Fish & Game J.* 18(1): 1-14, 6 figs. Jan. 1971. *WR 146: 10*

[Agr. Exp. Sta., Univ. R.I., Kingston.] Abstract: Wildlife position finding telemetry traditionally uses direction finding methods. These methods usually involve continuous transmitter broadcasting and the coordination of receivers. They are relatively inaccurate and cannot be adapted readily to automation. On the other hand, range finding methods are inherently suited to wildlife position finding telemetry. They require very brief transmitter "on" times, are more accurate and are readily automated. The hyperbolic approach to position finding is especially suitable. Here, transit of the signal from the instrumented animal is timed over three separate courses, one direct and two via automatic repeaters. Evaluation of the time delays from the two repeaters provides a two-dimensional estimate of position. By using recently developed long-term electronic timers, extended "off" time is possible. Brief "on" times permit powerful long-range transmissions with instrument longevities approaching battery shelf life.

Animal-mounted instrument packages, small in size and light in weight, are possible. The system presented is similar to the more familiar Loran method of marine navigation, except that the unknown location transmits energy to the position-finding station.

Peters, James A. BIOSTATISTICAL PROGRAMS IN BASIC LANGUAGE FOR TIME-SHARED COMPUTERS: COORDINATED WITH THE BOOK "QUANTITATIVE ZOOLOGY". *Smithsonian Contrib. Zool.* no. 69. 49 p. 1971. For sale by Supt. Documents, GPO, Washington, D.C. Price 50¢. *WR 145: 11*

Abstract: This series of computer programs, written in the language BASIC, is designed to facilitate use of the time-shared computer by individuals with little or no background in computers or programming. The programs are coordinated with the book "Quantitative Zoology," by G. G. Simpson, A. Roe, and R. Lewontin, which permits the user of this publication to find the proper statistical procedures for his needs in that book and to carry out the statistical procedure indicated. The programs are identified by using the page numbers from Simpson et al.

Peters, James A. A NEW APPROACH IN THE ANALYSIS OF BIOGEOGRAPHIC DATA. *Smithsonian Contrib. Zool.* no. 107. 28 p., 16 figs. 1971. For sale at 40¢ by Supt. Documents, GPO, Washington, D.C. *WR 145: 11*

Poole, Robert W. THE USE OF FACTOR ANALYSIS IN MODELING NATURAL COMMUNITIES OF PLANTS AND ANIMALS. *Ill. Natur. Hist. Surv., Biol. Notes* no. 72. 14 p., 14 figs. Feb. 1971. *WR 145: 11*

[Ill. Natur. Hist. Surv., Urbana.] "This paper is divided into three parts. The first gives a brief review of basic ecological principles necessary for the following two sections. The second section describes the statistical procedures considered and the analysis of a specific example. The third section considers the assumptions of the factor analytic model and compares them to the initial ecological generalities to see if the model really does mirror the workings of the community or if it only produces a set of mathematically correct but ecologically meaningless numbers."

WILDLIFE--MANAGEMENT & RESEARCH, GENERAL

Maasdijk, I. G. van, president. CONSEIL INTERNATIONAL DE LA CHASSE / (INTERNATIONAL HUNTING AND SHOOTING COUNCIL / XVIIth GENERAL ASSEMBLY, BUDAPEST (HUNGARY) / 11-13 MAY 1970). *au Secretariat General du Conseil*, 85 rue d'Amsterdam, Paris, France. [381 p., paged variously. 1971. Text in French, German, and English.] *WR 145: 11*

The following papers were presented: *The importance of pesticides for the wildlife population*, W. Rieck; *Damages caused by bark stripping*, W. Rieck; *The situation of the rabies epidemic in West Germany*, W. Rieck; *Game in Southwest-Africa*, H. Castell-Rüdenhausen; *The fauna of Sardinia*; *Report on the prevention of bark stripping*, J. Brüggemann and Ute Drescher-Kaden; *Development of the lynx population in the Romanian Carpathians*, G. Feneser, H. Almasan, and P. Decei; *The game reserve: a threat to wildlife*, E. Ueckermann; *The aboriginal roedeer in Italia*, E. von Lehmann; and *The wildlife population of Southwest Africa, report by the Southwest African Delegation*, H. Castell-Rüdenhausen.

Yeager, Lee E., editor. COLORADO GAME RESEARCH REVIEW 1969. *Game Res. Sect. Colo. Div. Game, Fish & Parks.* viii + 35 p., 40 figs. June 1970. Available from Division Game, Fish & Parks, P.O. Box 567, Fort Collins, Colo. Price $1.50. *WR 145: 11*

Contains units on game bird research, big game research, the Colorado Cooperative Wildlife Research Unit, and contributions by research personnel.

WILDLIFE--HUNTING AREAS & PROBLEMS

Garrett, James R. CHARACTERISTICS OF NEVADA HUNTERS. *Agr. Exp. Sta., Univ. Nev.* vi + 66 p. June 1970. *WR 145: 12*
[Univ. Nev., Reno.] Analysis of the responses to a mail questionnaire sent to approximately 5% of the people who hunted in Nevada during 1967.

Gottschalk, John S. THE GERMAN HUNTING SYSTEM, WEST GERMANY, 1968. *J. Wildl. Mgmt.* 36(1): 110-118, 1 fig. Jan. 1972. *WR 145: 12*
[Dep. Commerce, Washington, D.C.] Abstract: West Germany, with a land area about the same as that of Oregon, had a population in 1965 of 59.3 million. Population density is more than 10 times that of the United States. Wildlife is intensively managed, and game populations are surprisingly high. Hunting is limited to trained and tested licensees; the estimated number in 1968 was 222,000, or less than 0.4 percent of the population. Eighty-six percent of all hunters belong to the German Hunter Society, which promotes the interests of hunters and cooperates closely with federal and state agencies. The Society supports research institutions and hunting schools. Citizen interest in wildlife and nature protection is great and effective when focused on specific problems. The principles and practices of hunting have changed little since 1936.

Machan, Wayne J., and Robert D. Feldt. HUNTING RESULTS ON CROPLAND ADJUSTMENT PROGRAM LAND IN NORTHWESTERN INDIANA. *J. Wildl. Mgmt.* 36(1): 192-195. Jan. 1972. *WR 145: 12*
[Ind. Dep. Natur. Resour., Monticello.]

Nobe, Kenneth C., and Alphonse H. Gilbert. A SURVEY OF SPORTSMEN EXPENDITURES FOR HUNTING AND FISHING IN COLORADO, 1968. *Colo. Div. Game, Fish & Parks, Tech. Publ.* no. 24. 83 p., 29 figs. Mar. 1970. Price $1.00. *WR 145: 12*

WILDLIFE--FOOD HABITS & TECHNIQUES

Haneda, Kenzo, and Toshiko Horiuchi. [FOOD AND FOOD CONSUMPTION OF NESTLING COAL TITS *PARUS ATER*.] *Bull. Inst. Natur. Educ. Shiga Heights* 9. p. 31-43, illus. 1970. [From Biol. Abstr. 53(1), 1972. In Japanese with English summ.] *WR 145: 12*
[Shinshu Univ., Matsumoto, Japan.] The food of nestlings was composed of: insect larvae--66.4%; insect pupae--1.5%; insect imagines--4.6%; spiders--25.5%; snails--0.4%; and grit--1.1% (in fresh weight).

Kiuchi, Kiyoshi, Chitoshi Matsuzawa, Kohshi Noda, Hideo Satoh, Fumikazu Hosoda, Sakae Maruyama, and Tohoru Tawara. [NESTLING FOOD OF SOME BIRDS IN A CONIFEROUS FOREST. 1. LIST OF FOOD ITEMS.] *Bull. Inst. Natur. Educ. Shiga Heights* 9. p. 45-58, illus. 1970. [From Biol. Abstr. 53(1), 1972. In Japanese with English summ.] *WR 145: 12*
[Shinshu Univ., Matsumoto, Japan.] Foods of nestling *Certhia familiaris, Parus major, Parus montanus, Muscicapa sibirica, Phylloscopus borealis, Turdus chrysolaus, Troglodytes troglodytes* and *Dendrocopus major* are given. The most common food items were insect larvae.

WILDLIFE--PREDATION, CROP DAMAGE, CONTROL

Atzert, Stephen P. A REVIEW OF SODIUM MONOFLUOROACETATE (COMPOUND 1080) / ITS PROPERTIES, TOXICOLOGY, AND USE IN PREDATOR AND RODENT CONTROL. *U.S. Fish Wildl. Serv. Spec. Sci. Rep. Wildl.* no. 146. iii + 34 p. 1971. For sale at 45¢ by Supt. Documents, GPO, Washington, D.C. *WR 145: 12*
Contents: Early research, Occurrence in nature, Physical properties, Chemical properties, Absorption and distribution, Mode of action, Toxicology, Latent period, Detoxification and excretion, Tolerance and accumulation, Secondary poisoning, Treatment of sodium monofluoroacetate poisoning, Translocation and persistence in soil, Translocation and persistence in plants, Use of sodium monofluoroacetate in the United States, Use of sodium monofluoroacetate by the Bureau of Sport Fisheries and Wildlife, and Literature cited.

Batth, Surat S. BALER TWINE TEST AGAINST MICE AND CRICKET DAMAGE. *J. Econ. Entomol.* 65(1): 276-279, 3 figs. Feb. 1972. *WR 145: 13*
[Canada Dep. Agr., Ottawa, Canada.] Abstract: Seven brands of commercial baler twine used for tying bales of hay or straw were tested for resistance to damage by mice, *Peromyscus* spp. and *Microtus* spp.; crickets, *Gryllus* spp., and rot. All 7 brands were cut by laboratory mice, house mice, and field mice in the laboratory tests, whereas in field tests only 3 brands were cut. Neither rot nor field crickets damaged the test twines.

Lehmann, G. ZUR VERHINDERUNG VON STÖRUNGEN AN HOCHSPANNUNGSLEITUNGEN DURCH EICHHÖRNCHEN UND VÖGEL. [ON THE PREVENTION OF DISTURBANCE TO POWER LINES BY SQUIRRELS AND BIRDS.] *Ornithol. Mitteil.* 22(12): 257-258, 1 fig. Dec. 1970. In German. *WR 145: 13*
[Zeunerstrasse 79, Dresden, Germany.] By the use of a glass sleeve between insulator and pole.

WILDLIFE--REPORTS OF ORGANIZATIONS & REPORTS OF HARVESTS

Canadian Wildlife Service. CANADIAN WILDLIFE SERVICE '71. *Canadian Wildl. Serv., Dep. Environ.* 88 p., illus. 1971. Price $1.00. Available from Information Canada, Ottawa. *WR 145: 13*
The efforts of the Canadian Wildlife Service to study, manage, and preserve the wildlife populations in Canada in cooperation with other agencies and organizations are reported.

Maryland Fish and Wildlife Administration. MARYLAND FISH AND WILDLIFE MANAGEMENT. *Md. Fish & Wildl. Admin.* 40 p. + map. Nov. 1970. *WR 145: 13*
Basic guide for planning and carrying out programs in forest, upland, and migratory wetland wildlife, and in fisheries.

Missouri Department of Conservation. ANNUAL REPORT 1969-1970. *Mo. Dep. Conserv.* iv + 274 p. 1970. *WR 145: 13*
Includes sections on game management and research (p. 1-104).

New Zealand Wildlife Service, Department of Internal Affairs. WILDLIFE 1970--A REVIEW. *New Zealand Wildl. Serv., Dep. Internal Affairs.* 64 p., 6 figs., illus. [1971.] *WR 145: 13*
An annual report describing varied activities of the department, and wildlife species and habitats under current study.

North Dakota State Game and Fish Department. 1971 ANNUAL REPORT ISSUE. *N. Dak. Outdoors* 34(7). 25 p., illus. Jan. 1972. *WR 145: 13*
Game management and habitat development (p. 2-14).

Rocky Mountain Forest and Range Experiment Station. FORESTRY RESEARCH HIGHLIGHTS 1970. *Rocky Mountain For. & Range Exp. Sta.* iv + 51 p., illus. 1970. *WR 145: 13*
With sections on wildlife habitat and forest biology.

Saskatchewan Department of Natural Resources. ANNUAL REPORT DEPARTMENT OF NATURAL RESOURCES FOR THE FISCAL YEAR ENDING 31 MARCH 1970. *Province of Saskatchewan.* 48 p., illus. 1970. *WR 145: 13*

Transvaal Nature Conservation Division. SECOND ANNUAL REPORT OF THE TRANSVAAL NATURE CONSERVATION DIVISION / APRIL 1966 TO MARCH 1967. *Transvaal Provincial Administration.* 24 p., illus. 1967. *WR 145: 13*
[Private Bag 209, Pretoria, South Africa.]

Transvaal Nature Conservation Division. THIRD & FOURTH ANNUAL REPORTS OF THE TRANSVAAL NATURE CONSERVATION DIVISION / APRIL 1967 TO MARCH 1968 / APRIL 1968 TO MARCH 1969. *Transvaal Provincial Administration.* 36 p., illus. 1969. *WR 145: 13*
[Private Bag 209, Pretoria, South Africa.]

Transvaal Nature Conservation Division. FIFTH ANNUAL REPORT OF THE TRANSVAAL NATURE CONSERVATION DIVISION / APRIL 1969 TO MARCH 1970. *Transvaal Provincial Administration.* 39 p., illus. 1970. Also available in Afrikaans. *WR 145: 14*
[Private Bag 209, Pretoria, South Africa.]

WETLANDS & WILDLIFE

Eisenlohr, Wm. S., Jr., and Charles E. Sloan. GENERALIZED HYDROLOGY OF PRAIRIE POTHOLES ON THE COTEAU DU MISSOURI, NORTH DAKOTA. *Geol. Surv. Circ.* no. 558. v + 12 p., 4 figs. 1968. Available from U.S. Geological Survey, Washington, D.C. *WR 145: 14*

Jepsen, P. Uhd. VEGETATIONSAENDRINGER I HJARBAEK FJORD I PERIODEN 1967-1969. [ALTERATION OF VEGETATION IN HJARBAEK FJORD 1967-1969.] *Flora & Fauna* 76(3): 99-108, 7 figs. 1970. In Danish with English summ. *WR 145: 14*
[Vildtbiologisk Sta., Kalø, Denmark.] Changes in vegetation following the closing of the strait with a dam.

Perret, William S., and others. COOPERATIVE GULF OF MEXICO ESTUARINE INVENTORY AND STUDY, LOUISIANA. PHASE I, AREA DESCRIPTION AND PHASE IV, BIOLOGY. *La. Wild Life & Fisheries Comm.* vii + 175 p., 17 figs. + maps. 1971. *WR 145: 14*
Abstract: Tabular data are presented on water volume, vegetation, stream discharge, commercial fishery operations, coastal populations, pollution, filled areas, drained areas, and navigation channels in Louisiana's estuarine zone. Comparisons are made between past years' data and recent information.

Shjeflo, Jelmer B. EVAPOTRANSPIRATION AND THE WATER BUDGET OF PRAIRIE POTHOLES IN NORTH DAKOTA. HYDROLOGY OF PRAIRIE POTHOLES IN NORTH DAKOTA. *Geol. Surv. Professional Pap.* no. 585-B. v + 49 p., 45 figs. 1968. For sale by Supt. Documents, GPO, Washington, D.C. Price 45¢. *WR 145: 14*
"Prepared as part of the program of the Department of the Interior for the development of the Missouri River basin."

RANGELAND & WILDLIFE

Leege, Thomas A. NORTHERN ELK RANGES IMPROVED BY BURNING. *Idaho Wildl. Rev.* 24(4): 7-10, illus. Jan.-Feb. 1972. *WR 145: 14*

Shepherd, Harold R. EFFECTS OF CLIPPING ON KEY BROWSE SPECIES IN SOUTHWESTERN COLORADO. *Colo. Div. Game, Fish & Parks Tech. Publ.* no. 28. 104 p., 53 figs. July 1971. Price $1.00. *WR 145: 14*
Report of a 12-year clipping study conducted in southwestern Colorado in investigation of long-term effects of yearly removal of specific amounts of current-annual-growth (CAG) stems and older stems from five important browse species: antelope bitterbrush, big sagebrush, oakbrush, mountain mahogany, and serviceberry.--From summ.

FORESTLAND—MANAGEMENT FOR & DAMAGE BY WILDLIFE

Bailey, Arthur W., and William W. Hines. A VEGETATION-SOIL SURVEY OF A WILDLIFE-FORESTRY RESEARCH AREA AND ITS APPLICATION TO MANAGEMENT IN NORTHWESTERN OREGON. *Oreg. State Game Comm., Game Rep.* no. 2. v + 36 p., 9 figs. Aug. 1971. *WR 145: 14*
[Univ. Alberta, Edmonton, Alberta, Canada.] Description of study area, its soils, plant community-soil relationships, practical considerations in vegetation and soil mapping, and application to wildlife and forestry research and management are the major topics of discussion.

Halls, Lowell K., and John J. Stransky. ATLAS OF SOUTHERN FOREST GAME. *U.S. Forest Serv. Southern Forest Exp. Sta.* 24 p., illus. 1971. *WR 145: 15*
"This atlas presents information about the distribution of important game animals that find their food and cover in the 200 million acres of southern forests. It shows trends in populations where game kills are highest, and locations of public hunting areas. It describes the habitat requirements and possible habitat improvements for various species, including some migratory birds that winter in the South."

Steele, R. C. WILDLIFE CONSERVATION IN WOODLANDS. *Forestry Comm. Booklet* no. 29. 68 p., 30 figs. + 10 pls. 1972. Available from Her Majesty's Stationery Office (London) at 40d. *WR 145: 15*
[Monks Wood Exp. Sta., Abbots Ripton, Huntingdonshire, England.] "The aim of this booklet is to show how woodlands managed mainly for wood production can be improved as habitats for wildlife. It is concerned with identifying those features of woodlands which promote wildlife conservation and suggesting how these features can be maintained or introduced by management."

MAMMALS--GENERAL

Beyers, Robert J., Michael H. Smith, John B. Gentry, and Linda L. Ramsey. STANDING CROPS OF ELEMENTS AND ATOMIC RATIOS IN A SMALL MAMMAL COMMUNITY. *Acta Theriologica* 16(4): 203-211. Aug. 1971. In English with Polish summ. *WR 145: 15*
[Savannah River Ecol. Lab., Aiken, S.C.] Abstract: Specimens of *Blarina brevicauda, Peromyscus gossypinus* and *Ochrotomys nuttalli* were analyzed for their content of calcium, potassium, sodium, magnesium, iron and zinc. Elemental concentrations and atomic ratios for every element except iron were found to be essentially the same for each species. Standing crops of these six elements were calculated for the small mammal populations of two sites located in the lowland mesic-hardwood forests on the Savannah River Plant in South Carolina, USA. Total standing crops of elements were similar for all sites regardless of the presence or absence of certain species of the small mammal community.

Fulk, George William. THE BEHAVIORAL INTERACTIONS OF THE SHORT-TAILED SHREW AND THE MEADOW VOLE. *Ph.D. thesis, Univ. R.I.* 181 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(9), 1972.] *WR 145: 15*
"Microtus pennsylvanicus and *Blarina brevicauda."*

Grodziński, Władysław. ENERGY FLOW THROUGH POPULATIONS OF SMALL MAMMALS IN THE ALASKAN TAIGA FOREST. *Acta Theriologica* 16(17): 231-275, 7 figs. Aug. 1971. In English with Polish summ. [Also listed in *WR 143: 11* from *Ann. Zool. Fenn.*] *WR 145: 15*
[Jagiellonian Univ., Kraków, Poland.] Abstract: The primary net production and the numbers of small mammals were estimated in a white spruce forest *(Picea glauca)*. Daily metabolic rates and food habits were studied in the voles *(Clethrionomys rutilus, Microtus oeconomus)*, squirrels *(Tamiasciurus hudsonicus, Glaucomys volans)* and shrews *(Sorex cinereus)*. Production of this taiga forest amounts to only 10.2 million kcal/ha year. Due to different food habits of small mammals their total food available in the forest reaches as much as 1,320,000 kcal/ha *(i.e.* 12.9% of primary production*)*. Daily energy budgets described by functions of body size give the following mean values: *S. cinereus*--8.3 kcal, *C. rutilus*--12.2 kcal, *M. oeconomus*--15.1 kcal, *G. sabrinus*--39.6 kcal and *T. hudsonicus*--58.4 kcal/day. The mean numbers of small mammals were found to be about 15 voles of both species, 2-3 squirrels and 4 shrews per 1 hectare. The total annual production of these populations was estimated as approx. 2,500 kcal/ha, their assimilation--143,900 kcal, and consumption--178,600 kcal. During the population cycle of voles and squirrels all these values can fluctuate within a broad range; production 600-8,000, assimilation 38,000-400,000, consumption 47,000-500,000 kcal/ha year. In different years small mammals may therefore consume from 3 to 38% of the potential food supply provided by the taiga forest. These values are considerably higher than those found in any other woodland.

Jones, Clyde, and John L. Paradiso. MAMMALS IMPORTED INTO THE UNITED STATES IN 1969. *U.S. Fish Wildl. Serv. Spec. Sci. Rep. Wildl.* no. 147. ii + 33 p. [1971.] For sale at 40¢ from Supt. Documents, GPO, Washington, D.C. *WR 145: 16*

Abstract: The number of each species of mammal reported on Form 3-177 for importation into the United States in 1969 is listed and discussed. The major groups of mammals reported for importation are compared with lists of mammals used in research, lists of rare and endangered species, lists of mammals whose importation is restricted, and lists of mammals imported in 1968.

Mallinson, Jeremy. PYGMY HOG AND HISPID HARE. *Oryx* 11(2-3): 103-107. Sept. 1971. *WR 145: 16*

Re-discovery of the pygmy hog *Sus salvanius* in the Himalayan foothills of Assam, and the capture of one hispid hare, *Caprolagus hispidus*.

McNab, Brian K. ON THE ECOLOGICAL SIGNIFICANCE OF BERGMANN'S RULE. *Ecology* 52(5): 845-854, 8 figs. Late Summer 1971. *WR 145: 16*

[Univ. Fla., Gainesville.] Abstract: A positive correlation of weight with latitude in homoiotherms (Bergmann's rule) cannot normally depend upon the physics of heat exchange. Most latitudinally widespread mammals in North America do not follow this rule. Those that do are usually carnivores or granivores; a change in their body size reflects a change in the size of their prey. A latitudinal change in the size of available prey is due either to the distribution of the prey species or to the distribution of other predators utilizing the same prey species. Only the smallest species of a set of similar predators normally will conform to Bergmann's rule, and then only beyond the limits of distribution of the largest species. These changes in size seem to be another example of character displacement.--Courtesy/ Paul A. Stewart.

Schubert, Renate. UNTERSUCHUNGEN ÜBER DAS FETTSÄUREMUSTER IM DEPOTFETT UND MILCHFETT VON HEIMISCHEN WILDTIERARTEN. [INVESTIGATIONS ON THE FATTY ACID PATTERNS IN ORBITAL AND OMENTAL FAT OF WILD ANIMAL SPECIES.] *Inaugural Diss. Univ. Munich.* ii + 78 p., 5 figs. 1969. In German with English summ. *WR 145: 16*

MAMMALS--TECHNIQUES

Caughley, Graeme, and John Goddard. IMPROVING THE ESTIMATES FROM INACCURATE CENSUSES. *J. Wildl. Mgmt.* 36(1): 135-140, 1 fig. Jan. 1972. *WR 145: 16*

[Univ. Sydney, Sydney, Australia.] Abstract: Most counts of animals are underestimates of the true total, because some animals are not seen during the census. This is particularly true of an aerial census. A method is presented for estimating the number of animals in an area from several counts, each of which underestimates the true total. It requires a mean and a variance from sets of counts obtained at two levels of survey efficiency. An estimate of true numbers is obtained by solving a pair of simultaneous equations describing a parabolic relationship between mean and variance. Computer simulations suggest that the estimate is stable whether sightability is constant or variable between individuals and whether individual sightabilities remain constant or vary between survey occasions. A worked example utilizes counts of black rhinoceros *(Diceros bicornis)*.

Dapson, Richard W., and Jacquiline M. Irland. AN ACCURATE METHOD OF DETERMINING AGE IN SMALL MAMMALS. *J. Mammal.* 53(1): 100-106, 1 fig. Feb. 1972. *WR 145: 16*

[Univ. Mich., Flint.] Abstract: The tyrosine content of eye lenses of known-age old-field mice *(Peromyscus polionotus)* were analyzed colorimetrically. The soluble fraction increases linearly with age from 45 to 308 days, but thereafter is not related to age. The insoluble fraction varies curvilinearly with age to at least 750 days. Accumulation of soluble protein represents growth, whereas conversion of soluble to insoluble protein is regarded as aging. Aging, as

measured by the insoluble fraction, is much less variable than growth, and affords an age estimating technique with unprecedented accuracy for small mammals. The 95 per cent confidence limits about a predicted age of 100 days are 96 to 107 days for a mean prediction, 70 to 147 days for individual prediction. Similar values for 400 days are 390 to 426 and 285 to 583 days, respectively.

Eltringham, S. K., and J. E. C. Flux. NIGHT COUNTS OF HARES AND OTHER ANIMALS IN EAST AFRICA. *East African Wildl. J.* 9. p. 67-72, 2 figs. Aug. 1971. *WR 145: 17*

[P.O. Queen Elizabeth Nat. Park, Lake Katwe, Uganda.] Night counts of hares and other animals were made on a disused airstrip in the Queen Elizabeth National Park, Uganda and on the road between Magadi and Nairobi in Kenya. It is concluded that night counts can be useful in revealing population trends but not for assessing total numbers or for comparing densities in different areas.--From summ.

Frantz, Stephen C. FLUORESCENT PIGMENTS FOR STUDYING MOVEMENTS AND HOME RANGES OF SMALL MAMMALS. *J. Mammal.* 53(1): 218-223, 1 fig. Feb. 1972. *WR 145: 17*

[Johns Hopkins Univ., Baltimore, Md.] *"Bandicota bengalensis."*

Gentry, John B., Michael H. Smith, and John G. Chelton. AN EVALUATION OF THE OCTAGON CENSUS METHOD FOR ESTIMATING SMALL MAMMAL POPULATIONS. *Acta Theriologica* 16(10): 149-159, 4 figs. Aug. 1971. In English with Polish summ. [Also listed in *WR 143: 11* from *Ann. Zool. Fenn.*] *WR 145: 17*

[Savannah River Ecol. Lab., Aiken, S.C.] Abstract: The aim of this study was to evaluate the results obtained from the octagon census method. Trapping was conducted on the census lines for 28 days. On day 28 a 540 m assessment line was laid out across the octagon for the purpose of determining the width of the area sampled by the octagon census lines. Traps on assessment lines were set for 4 days. Octagons were set up in four different areas of the mesic-hardwood forest and first trapped during the summer and then retrapped during the winter. Theoretically, captures along the assessment lines should show a decline as the census line is approached. This was not the case; more animals were captured at assessment line stations near the census lines than at those assessment line stations farther away. The sudden appearance of animals in an area supposedly voided of inhabitants is difficult to explain. However, because of this phenomenon, the octagon census method failed in its objective of giving density estimates.

Henry, Louise G., and Sturgis McKeever. A MODIFICATION OF THE WASHING TECHNIQUE FOR QUANTITATIVE EVALUATION OF THE ECTOPARASITE LOAD OF SMALL MAMMALS. *J. Med. Entomol.* 8(5): 504-505. 15 Dec. 1971. *WR 145: 17*

[Clemson Univ., Clemson, S.C.]

Jahoda, John C. USING A COMPUTER TO MEASURE ACTIVITY OF SMALL MAMMALS. *J. Mammal.* 53(1): 212-213. Feb. 1972. *WR 145: 17*

[Bridgewater State Coll., Bridgewater, Mass.] *"Onychomys leucogaster."*

Kaufman, Donald W., Gary C. Smith, R. Marie Jones, John B. Gentry, and Michael H. Smith. USE OF ASSESSMENT LINES TO ESTIMATE DENSITY OF SMALL MAMMALS. *Acta Theriologica* 16(9): 127-147, 6 figs. Aug. 1971. In English with Polish summ. [Also listed in *WR 143: 13* from *Ann. Zool. Fenn.*] *WR 145: 17*

[Savannah River Ecol. Lab., Aiken, S.C.] Removal trapping along three sets of lines was used to estimate density of small mammals in the lowland mesic-hardwood forest. Traps were checked on the octagon census lines for 28 days, on the primary assessment lines for a second 28 day period, and on the secondary assessment lines and the octagon census lines during a final 28 day period. Primary assessment lines were placed across the octagon census lines while the secondary assessment lines were placed across the primary assessment lines. Linear regression equations were fitted to accumulative captures over distance

for the primary assessment lines and the secondary assessment lines to determine the area of effect around the octagon census lines and a selected portion of the primary assessment lines, respectively. Linear regression equations were also used to estimate numbers of small mammals in the two areas of effect when the methods of Hayne (1949) and Janion, Ryszkowski and Wierzbowska (1968) could not be used to estimate number.--From abstr.

Kols, A. L., G. W. Corner, and H. P. Tietjen. A RADIO-FREQUENCY BEACON TRANSMITTER FOR SMALL MAMMALS. *J. Wildl. Mgmt.* 36(1): 177-179, 2 figs. Jan. 1972. *WR 146: 18*

[Denver Wildl. Res. Cent., Denver, Colo.] Abstract: A lightweight (1.4 grams with 8-day battery), short-range (90-200 feet), radio-frequency beacon transmitter is described for use on small mammals that have limited ranges. The unit does not contain a tuned antenna, and collar size is not critical. In preliminary tests with 12, 15- to 25-gram rodents, locations and individual body movements could be detected.

Pelikán, Jaroslav. QUADRAT SIZE AND DENSITY ESTIMATES OF SMALL MAMMALS. *Zool. Listy* 20(2): 139-152, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 146: 18*

[Czechoslovak Acad. Sci., Brno Czechoslovakia.]

Ramsey, Paul R., and Linda A. Briese. EFFECTS OF IMMIGRANTS ON THE SPATIAL STRUCTURE OF A SMALL MAMMAL COMMUNITY. *Acta Theriologica* 16(13): 191-202, 3 figs. Aug. 1971. In English with Polish summ. *WR 146: 18*

[Savannah River Ecol. Lab., Aiken, S.C.] Abstract: Experiments were performed to test effects of simulated immigration upon a community of small mammals. Intra- and interspecific contacts were induced by releasing four groups of alien cotton rats, *Sigmodon hispidus*, onto a semi-enclosed pasture. A similar, adjacent area served as a control. The sequential appearance of three species of rodents in live-trapped samples was not affected by the releases. No changes resulting from the releases were observed in rates of cumulative capture of eastern harvest mice, *Reithrodontomys humulis*, or meadow voles, *Microtus pennsylvanicus*. Increased mortality (or emigration) and decreased trappability occurred in the population of resident *Sigmodon* under treatment. Differences in initial dispersion of the "immigrants" are presented. The characteristics of migrant animals are discussed.

Smith, G. C., D. W. Kaufman, R. M. Jones, J. B. Gentry, and M. H. Smith. THE RELATIVE EFFECTIVENESS OF TWO TYPES OF SNAP TRAPS. *Acta Theriologica* 16(18): 284-288. Aug. 1971. *WR 146: 18*

[Savannah River Ecol. Lab., Aiken, S.C.] Abstract: The relative effectiveness of Museum Special and Victor snap traps has not been tested. Both types of traps were set side by side, placed 5.5, 11, or 15 m apart on census lines or grids, baited with peanut butter, and checked daily. During part of the study, one trap at each station was painted white alternating between Museum Special and Victor traps. There were no significant differences in the number of captures by white and plain traps of either type. However, Museum Special traps removed a larger percentage of three most abundant species combined and the two most abundant rodent species considered separately than did the Victor traps. Shrews were caught equally well by both types of traps.

Smith, Michael H., Roland Blessing, John G. Chelton, John B. Gentry, Frank B. Golley, and John T. McGinnis. DETERMINING DENSITY FOR SMALL MAMMAL POPULATIONS USING A GRID AND ASSESSMENT LINES. *Acta Theriologica* 16(8): 105-125, 9 figs. Aug. 1971. In English with Polish summ. *WR 146: 18*

[Savannah River Ecol. Lab., Aiken, S.C.] Abstract: A modification of the Polish Standard Minimum 16 x 16 grid was used to obtain density estimates. Eight assessment lines were used to evaluate the area of effect around the grid. Mammals were removed out to 98 m from the grid. Theoretical considerations for the density calculations using data from the assessment lines are given along

with an example. Density as calculated by the method recommended in the Polish Standard Minimum method was 81% higher than the comparable figure (15.99 small mammals per ha) calculated by the assessment line method. The discrepancy results from the movement of mammals onto the plot during the removal phase of the study. The number removed was equivalent to the resident population of small mammals on the grid in only 2.8 days of trapping. Future studies must evaluate the area of effect around the grid; the assessment line method is the only known way of efficiently estimating the size of the border zone.

MAMMALS--FAUNAS & MANUALS

Armstrong, David M., J. Knox Jones, Jr., and Elmer C. Birney. MAMMALS FROM THE MEXICAN STATE OF SINALOA. III. CARNIVORA AND ARTIODACTYLA. *J. Mammal.* 53 (1): 48-61, 1 fig. Feb. 1972. *WR 145: 19*

[Univ. Colo., Boulder.] Abstract: Nineteen species of carnivores and two species of artiodactyls are recorded from Sinaloa, Mexico. Accounts of species report distributional data, and, where appropriate, comments on systematics and ecology. A list of unreported Carnivora that may occur in the state is appended.

Connor, Paul F. THE MAMMALS OF LONG ISLAND, NEW YORK. *N.Y. State Mus. & Sci. Serv. Bull.* 416. v + 78 p., 26 figs. July 1971. *WR 145: 19*

[N.Y. State Mus. & Sci. Serv., Albany.] Annotated list of 59 spp.

De Barros Machado, A. MAMIFEROS DE ANGOLA AINDA NÃO CITADOS OU POUCO CONHECIDOS. [MAMMALS OF ANGOLA NOT PREVIOUSLY REPORTED OR LITTLE KNOWN.] *Publ. Cult. Cia. Diamante Angola* 46. p. 97-231, illus. 1969. [From Biol. Abstr. 53 (1), 1972. In Portuguese.] *WR 145: 19*

[Mus. Dundo, Lunda, Angola, Portuguese West Africa.] Reported for the first time in Angola are: *Aonyx (Paraonyx) congica congica, Cephalophus dorsalis, Aloelaphus lichtensteini, Thryonomys gregorianus, Protoxerus stangeri kwango* and *Thamnomys rutilans.*

Kramer, Raymond J. HAWAIIAN LAND MAMMALS. *Charles E. Tuttle Co., Inc.* (Rutland, Vt. and Tokyo, Japan). 347 p., illus., 6 x 8.25 in. 1971. Price $12.50. *WR 145: 19*

The history, description, reproduction, habitat and distribution, food habits, behavior, parasites and diseases of the 23 spp. of land mammals inhabiting the 73 islands of the Hawaiian archipelago. Prior to man only a rare seal and a subspecies of an American hoary bat were found on these islands. The Polynesians brought four more species. Most of the species were introduced after the discovery of Hawaii in 1778.

Smithers, Reay H. N. THE MAMMALS OF BOTSWANA. *Nat. Mus. Rhodesia* (Salisbury). *Mus. Memoir* no. 4. iii + 340 p., 23 figs., 16 pls., maps. 1971. Price 6 pounds and 50 shillings. *WR 145: 19*

Taxonomic notes, distribution, habitat, habits, food, breeding, and sizes and weights of the 153 spp. of mammals occurring in Botswana.

Van Peenen, P. F. D., R. H. Light, and J. F. Duncan. OBSERVATIONS ON MAMMALS OF MT. SONTRA, SOUTH VIETNAM. *Mammalia* 35(1): 126-143, illus. 1971. [From Biol. Abstr. 53(1), 1972. In English with French summ.] *WR 145: 19*

[U.S. Nav. Med. Res. Inst., Bethesda, Md.] Species are listed with comments on habitats and taxonomy; some are in genera which need revision; in such cases, measurements are given.

MAMMALS--POPULATIONS, HOME RANGES, COMMUNITIES

Faust, Barry F., Michael H. Smith, and W. Bradley Wray. DISTANCES MOVED BY SMALL MAMMALS AS AN APPARENT FUNCTION OF GRID SIZE. *Acta Theriologica* 16(11): 161-177, 4 figs. Aug. 1971. In English with Polish summ. [Also listed in *WR 143: 11* from *Ann. Zool. Fenn.*] *WR 145: 19*

[Savannah River Ecol. Lab., Aiken, S.C.] Abstract: Live traps were used on

a 26 x 26 grid (14.1 ha) to determine the movement patterns of three species of small mammals in a lowland mesic-hardwood forest. *Blarina brevicauda* moved an average of 94.7 m between successive captures, *Oohrotomys nuttalli* 72.8 m and *Peromyscus gossypinus* 54.9 m. These data are not consistent with Calhoun's theory of social dominance. Linear relationships are given for predicting home range size as calculated by several different methods from average distance between captures. A new way of depicting the distribution of distances between captures is given. Movements on the middle 16 x 16 grid compared to those on the 26 x 26 grid were 19.4% shorter for *O. nuttalli* and 25.1% shorter for *P. gossypinus*. Longer movements are extending the area of effect around a census grid or line farther than might be expected from data collected on smaller study plots. Thus, an upward bias is introduced into most density estimates.

Gentry, John B., Frank B. Golley, and Michael H. Smith. YEARLY FLUCTUATIONS IN SMALL MAMMAL POPULATIONS IN A SOUTHEASTERN UNITED STATES HARDWOOD FOREST. *Acta Theriologica* 16(12): 179-190, 3 figs. Aug. 1971. In English with Polish summ. [Also listed in *WR 143: 15* from *Ann. Zool. Fenn.*] *WR 146: 20*

[Savannah River Ecol. Lab., Aiken, S.C.] Abstract: A 5.8 hectare grid, consisting of 256 stations spaced 15 meters apart, was laid out in a mature cove hardwood forest near Aiken, South Carolina, USA. Snap traps were used to remove animals from the grid. The grid was trapped once each year from 1967-1970. Emphasis was placed upon population levels, changes in species composition and habitat utilization of the small mammals. Also considered were the effects of various environmental and treatment variables upon the final trapping results. Population levels declined during the study. Species composition did not remain the same over the four year period. Prebaiting resulted in different removal rates. Weather changes also influenced removal rates.

MAMMALS--PARASITES & DISEASES

Everard, C. O. R., and Thomas H. G. Aitken. CUTEREBRID FLIES FROM SMALL MAMMALS IN TRINIDAD. *J. Parasitol.* 58(1): 189-190, 1 fig. Feb. 1972. *WR 145: 20*

[Trinidad Regional Virus Lab., P.O. Box 164, Port-of-Spain, Trinidad.]

Kalter, S. S., R. L. Heberling, and B. Claussen. ANTIBODY IN WILD ANIMAL (AFRICAN) SERA TO HUMAN AND SIMIAN VIRUSES. *Lab. Anim. Sci.* 21(6, Part I): 829-831. Dec. 1971. *WR 146: 20*

Summary: Sera from several wild African nonprimate species (elephant, gazelle, zebra, kongoni, and wildebeeste) were tested for the presence of CF or HI antibody against a variety of human and simian viruses. For the most part no antibodies were detected, suggesting a lack of contact with, or susceptibility to, the primate viruses employed. Exceptions were poxvirus HI antibody in the zebra and kogoni, parainfluenza 2 HI antibody in the zebra, reovirus HI antibody in the elephant, gazelle, and wildebeeste, and influenza A_2 HI antibody in all the species studied.

Ryckman, Raymond E. PLAGUE VECTOR STUDIES. PART I. THE RATE OF TRANSFER OF FLEAS AMONG *CITELLUS, RATTUS* AND *SYLVILAGUS* UNDER FIELD CONDITIONS IN SOUTHERN CALIFORNIA. *J. Med. Entomol.* 8(5): 535-540, 1 fig. 15 Dec. 1971. *WR 146: 20*

[Loma Linda Univ., Loma Linda, Calif.] Abstract: The extent of transfer of fleas among *Citellus, Rattus* and *Sylvilagus* was studied. Electrical fences were used to confine the mammals in 0.4-ha fields. Based on analysis of 92,694 fleas from 620 hosts, is concluded that *Xenopsylla cheopis, Diamanus montanus,* and *Hoplopsyllus anomalus* will attack atypical hosts, in the same habitat as their usual hosts, at epizootiologically significant rates. An *X. cheopis* index of 1 occurred on ground squirrels *(Citellus beecheyi)*, and of 0.9 on rabbits *(Sylvilagus audubonii)*.

Sonenshine, Daniel E., and Gerald F. Levy. THE ECOLOGY OF THE LONE STAR TICK, *AMBLYOMMA AMERICANUM* (L.), IN TWO CONTRASTING HABITATS IN VIRGINIA (ACARINA: IXODIDAE). *J. Med. Entomol.* 8(6): 623-635, 6 figs. 30 Dec. 1971. *WR 145: 21*
[Old Dominion Univ., Norfolk, Va.] Radioisotope-tagged larvae of the lone star tick were released in an attempt to estimate the population density, but none were recaptured on the various mammals sampled (raccoons, skunks, opossums and gray squirrels).--From summ.

Sonenshine, Daniel E., and Meir Ziv. ECOLOGICAL STUDIES ON TICKS INFESTING SHEEP AND SMALL MAMMALS IN AN UNIMPROVED SEMIDESERT PASTURE IN ISRAEL. *J. Med. Entomol.* 8(6): 683-686, 1 fig. 30 Dec. 1971. *WR 145: 21*
[Old Dominion Univ., Norfolk, Va.] *"Erinaceus* sp. and *Meriones tristrami."*

Stockdale, Peter Howard Gough. MIGRATION PATTERNS AND DEVELOPMENT OF METASTRONGYLOIDS IN CARNIVORES. *Ph.D. thesis, Univ. Guelph* (Canada). 1969. [From Diss. Abstr. Int. B Sci. Eng. 32(9), 1972.] To obtain a microfilm copy please order directly from the National Library of Canada at Ottawa. *WR 145: 21*

Youatt, William G., John N. Stuht, and Hazel D. Harte. WILDLIFE RABIES IN MICHIGAN 1958-1970. *Mich. Dep. Natur. Resour., Res. Dev. Rep.* no. 229. [11] p., 1 fig. 1 Mar. 1971. *WR 145: 21*
Of 591 cases of rabies in Michigan since 1958, wild species account for 64.4% of the total. Skunks are by far the most frequently infected species, wild or domestic, accounting for 82.4% of wild animal rabies, and 53.1% of total rabies cases in the state.

SHREWS, MOLES, BATS

Baer, George M., and Robert G. McLean. A NEW METHOD OF BLEEDING SMALL AND INFANT BATS. *J. Mammal.* 53(1): 231-232, 2 figs. Feb. 1972. *WR 145: 21*
[Cent. Dis. Control, P.O. Box 363, Lawrenceville, Ga.]

Blus, Lawrence J. REPRODUCTION AND SURVIVAL OF SHORT-TAILED SHREWS *(BLARINA BREVICAUDA)* IN CAPTIVITY. *Lab. Anim. Sci.* 21(6, Part I): 884-891, 1 fig. Dec. 1971. *WR 145: 21*
[Patuxent Wildl. Res. Center, Laurel, Md.] Summary: A breeding colony of short-tailed shrews *(Blarina brevicauda)* was established at the Patuxent Wildlife Research Center, Laurel, Maryland. The shrews were successfully maintained in open-topped aluminum boxes containing 3 inches of sphagnum peat moss. The food consisted of ground-up rodent carcasses, chicken parts, turkey breeder ration, bone meal, and a vitamin supplement. Monthly mortality in the colony ranged from 3.7-26.9%. The average minimal time until death was 4.6 months for males and 4.4 months for females. A total of 383 young was born in 81 litters; 278 of these were weaned (72.6%). Most young were weaned at 25 days of age. Survival to 1 year included 8.7% of those born and 15.4% of those weaned. The mean litter size was 4.7. One-half of the pairings of males and females resulted in birth of live young. Reproductive success of the captive shrews was apparently due to controlled light and temperature, an ample daily ration of an adequate diet in addition to a continuous supply of water, separation of the male from the female prior to parturition, and minimal disturbance of the mother and young by the investigator. The former 2 factors were thought to be important in promoting year-round breeding.

Choate, Jerry R. VARIATION WITHIN AND AMONG POPULATIONS OF THE SHORT-TAILED SHREW IN CONNECTICUT. *J. Mammal.* 53(1): 116-128, 3 figs. Feb. 1972. *WR 145: 21*
[Fort Hays Kans. State Coll., Hays.] *"Blarina brevicauda."*

Fons, Roger. CONTRIBUTIONS A LA CONNAISSANCE DE LA MUSARAIGNE ÉTRUS QUE *SUNCUS ETRUSCUS* (SAVI, 1822) (MAMMIFÈRE SORICIDAE). [CONTRIBUTION TO THE KNOWLEDGE OF THE ETRUSCAN SHREW *SUNCUS ETRUSCUS* (SAVI, 1822) (MAMMALIA SORICIDAE).] *Vie Milieu Ser. C Biol. Terr.* 21(1): 209-218, illus. 1970. [From Biol. Abstr. 53(1), 1972. In French with German and English summ.] *WR 145: 22*
[Lab. Arago, 66-Banyuls-sur-Mer, France.]

Gaisler, Jiří, and Vladimír Hanák. SOUČASNÝ STAV A PERSPEKTIVY VÝZKUMU EKOLOGIE NETOPÝRŮ V ČESKOSLOVENSKU. [CZECHOSLOVAK BAT RESEARCH PROGRAMME.] *Vertebr. Zprávy* 1969(3): 83-96. 1969. In Czech with English summ. *WR 145: 22*
[Univ. Brno, Brno, Czechoslovakia.] Review paper of bat research in Czechoslovakia.

Gardner, Alfred L., and Dilford C. Carter. A REVIEW OF THE PERUVIAN SPECIES OF *VAMPYROPS* (CHIROPTERA: PHYLLOSTOMATIDAE). *J. Mammal.* 53(1): 72-82. Feb. 1972. *WR 145: 22*
[La. State Univ., Baton Rouge.] Abstract: The taxonomic identities of Peruvian bats assigned to the genus *Vampyrops* are discussed. Peruvian species of *Vampyrops* include *vittatus*, *infuscus* (synonyms, *fumosus* and *intermedius*), *dorsalis* (synonyms, *umbratus* and *oratus*), *nigellus*, *helleri*, and *brachycephalus*. A neotype is designated for *V. infuscus*.

Gebczyński, Marek. OXYGEN CONSUMPTION IN STARVING SHREWS. *Acta Theriologica* 16(18): 288-292, 2 figs. Aug. 1971. *WR 145: 22*
Abstract: The experiments were carried out on fed and starving shrews--*Sorex minutus*, *S. araneus* and *Neomys fodiens*. The hypothesis suggesting the ability of shrews to fall into the state of reversible hypothermy under the effect of lack of food was not confirmed.

Goehring, Harry H. TWENTY-YEAR STUDY OF *EPTESICUS FUSCUS* IN MINNESOTA. *J. Mammal.* 53(1): 201-207, 1 fig. Feb. 1972. *WR 145: 22*
[St. Cloud State Coll., St. Cloud, Minn.]

Grulich, Ivo. *TALPA CAECA DOBYI* SUBSP. NOVA IN DEN ALPES MARITIMES, FRANKREICH (TALPINAE, INSECTIVORA). [*TALPA CAECA DOBYI* SUBSP. NOVA IN THE MARITIME ALPS, FRANCE (TALPINAE, INSECTIVORA).] *Zool. Listy* 20(2): 111-129, illus. 1971. [From Biol. Abstr. 53(2), 1972. In German with English summ.] *WR 145: 22*
[Czechoslovak Acad. Sci., Brno, Czechoslovakia.]

Hamilton, Robert B., and Dick T. Stalling. *LASIURUS BOREALIS* WITH FIVE YOUNG. *J. Mammal.* 53(1): 190. Feb. 1972. *WR 145: 22*
[Northwestern State Univ., Natchitoches, La.]

Hanák, Vladimír. *MYOTIS BRANDTII* (EVERSMANN, 1845) (VESPERTILIONIDAE, CHIROPTERA) IN DER TSCHECHOSLOWAKEI. [*MYOTIS BRANDTII* (EVERSMANN, 1845) (VESPERTILIONIDAE, CHIROPTERA) IN CZECHOSLOVAKIA.] *Vestn. Cesk. Spol. Zool.* 35(3): 175-185, illus. 1971. [From Biol. Abstr. 53(1), 1972. In German with English summ.] *WR 145: 22*
[Vinicna 7, Prague, Czechoslovakia.]

Harmata, Wincenty. KILKA UWAG NA TEMAT OCHRONY NIETOPERZY W POLSCE. [NOTES ON THE PROTECTION OF BATS IN POLAND.] *Chrońmy Przyrode Ojczystą* 24(2): 32-36. Mar.-Apr. 1968. In Polish with English summ. *WR 145: 22*

Jones, Clyde, and Royal D. Suttkus. NOTES ON NETTING BATS FOR ELEVEN YEARS IN WESTERN NEW MEXICO. *Southwest. Natur.* 16(3&4): 261-266. 18 Feb. 1972. *WR 145: 22*
[Bur. Sport Fisheries & Wildl., Washington, D.C.] Abstract: Data were accumulated for 11 years with regard to relative abundance of bats sampled by mist nets placed over water in open areas at three localities in western New Mexico. Numbers of species and individual bats encountered varied at each locality studied and for each year of sampling. These variations in numbers of bats were correlated with the ecological ranges of the animals and recent disturbances by man.

Jones, J. Knox, Jr., Jerry R. Choate, and Alberto Cadena. MAMMALS FROM THE MEXICAN STATE OF SINALOA. II. CHIROPTERA. *Occas. Pap. Mus. Natur. Hist. Univ. Kans.* no. 6. p. 1-29, 1 fig. 25 Jan. 1972. *WR 145: 23*
[Tex. Tech Univ., Lubbock.] Among the 44 chiropteran species presently recorded from Sinaloa, there is one representative each of the families Emballonuridae and Noctilionidae, four chilionycterids, 19 phyllostomatids, a single natalid, 11 spp. of Vespertilionidae and seven of Molossidae. The majority of species are closely associated with the Neotropics--tropical or subtropical in their affinities--and distributed at low or middle altitudes in Sinaloa.--From summ.

Kale, Herbert W. II. A HIGH CONCENTRATION OF *CRYPTOTIS PARVA* IN A FOREST IN FLORIDA. *J. Mammal.* 53(1): 216-218, 1 fig. Feb. 1972. *WR 145: 23*
[Entomol. Res. Center, P.O. Box 520, Vero Beach, Fla.] A density estimate of 12.6 *Cryptotis* per acre.

Kirk, Gustav. DER GESETZLICHE FLEDERMAUSSCHUTZ IN DER WALT. [WORLDWIDE PROTECTION OF BATS BY LAW.] *Waldhygiene* 8(1-4): 101-102. 1969. In German with English summ. *WR 145: 23*
Today we find a protection of bats by law in the following countries: Sweden, Finland, USSR, Denmark, Germany, Poland, Switzerland, Liechtenstein, Austria, Hungary, Czechoslovakia, Yugoslavia, Italy, Bulgaria, USA (Texas and Kentucky), Mexico, New Zealand and Australia.--From summ.

Kulczyńska, Wanda. W SPRAWIE OCHRONY NIETOPERZY. [ON THE PROTECTION OF BATS.] *Chrońmy Przyrodę Ojczystą* 24(2): 27-32. Mar.-Apr. 1968. In Polish with English summ. *WR 145: 23*

LaVal, Richard K. DISTRIBUTIONAL RECORDS AND BAND RECOVERIES OF BATS FROM PUEBLA, MEXICO. *Southwest. Natur.* 16(344): 449-451. 18 Feb. 1972. *WR 145: 23*
[Univ. Kans., Lawrence.]

McManus, John J., and David W. Nellis. TEMPERATURE REGULATION IN THREE SPECIES OF TROPICAL BATS. *J. Mammal.* 53(1): 226-227, 1 fig. Feb. 1972. *WR 145: 23*
[Fairleigh Dickinson Univ., Madison, N.J.] *"Brachyphylla cavernarum, Artibeus jamaicensis* and *Molossus molossus."*

Morris, Patrick. HEDGEHOGS. *Forestry Comm.: Forest Record* no. 77. 17 p., 17 figs. 1970. Available from Her Majesty's Stationery Office (London) at 2s 6d. *WR 145: 23*
[Royal Holloway Coll., Univ. London, England.] Distribution, life history, hibernation, behavior, feeding, predator and other mortality factors, parasites and diseases of *Erinaceus europaeus* are the major topics of discussion.

Nellis, David W. ADDITIONS TO THE NATURAL HISTORY OF *BRACHYPHYLLA* (CHIROPTERA). *Caribbean Sci.* 11(1/2): 91. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 23*
[Lower Love, St. Croix, Virgin Islands.]

Radovsky, Frank J., J. Knox Jones, Jr., and Carleton J. Phillips. THREE NEW SPECIES OF *RADFORDIELLA* (ACARINA: MACRONYSSIDAE) PARASITIC IN THE MOUTH OF PHYLLOSTOMATID BATS. *J. Med. Entomol.* 8(6): 737-746, 29 figs. 30 Dec. 1971. *WR 145: 23*
[Bernice P. Bishop Mus., Box 6037, Honolulu, Hawaii.]

Ramírez-Pulido, José, and Ticul Alvarez. NOTAS SOBRE LOS MURCIELAGOS DEL GENERO *LEPTONYCTERIS* EN MEXICO, CON LA DESIGNACION DEL LECTOTIPO DE *L. YERBABUENAE* MARTINEZ Y VILLA, 1940. [NOTES ON THE BATS OF THE GENUS *LEPTONYCTERIS* IN MEXICO WITH THE DESIGNATION OF THE LECTOTYPE OF *L. YERBABUENAE* MARTINEZ Y VILLA, 1940.] *Southwest. Natur.* 16(344): 249-259, 5 figs. 18 Feb. 1972. In Spanish with English summ. *WR 145: 23*

Smith, James Dale. SYSTEMATICS OF THE CHIROPTERAN FAMILY MORMOOPIDAE. *Univ. Kans. Mus. Natur. Hist. Misc. Publ.* no. 56. p. 1-132, 40 figs. 10 Mar. 1972. In English with Spanish summ. *WR 145: 24*
[Calif. State Coll., Fullerton.]

Tumsitt, J. R., and Irving Fox. RECORDS OF BAT ECTOPARASITES FROM THE CARIBBEAN REGION (SIPHONAPTERA, ACARINA, DIPTERA). *Canadian J. Zool.* 48(5): 1093-1097. 1970. *WR 145: 24*
[School Med., San Juan, Puerto Rico.] Abstract: Twenty-eight species of ectoparasites, including one flea, one chigger, two ticks, six mites, and 18 streblids, are listed for 18 species of bats from Colombia, Guyana, Jamaica, and Puerto Rico. Most are new host or geographic records. Distributional observations are included when available.

Wilson, Don E. FOOD HABITS OF *MICRONYCTERIS HIRSUTA* (CHIROPTERA: PHYLLOSTOMIDAE). *Mammalia* 35(1): 107-110. 1971. [From Biol. Abstr. 53(1), 1972. In English with French summ.] *WR 145: 24*
[Univ. N. Mex., Albuquerque.]

Young, Allen M. AN EXPERIMENTAL STUDY ON THE RELATION OF MORTALITY OF YOUNG TO ADULT NUMBERS IN COLONIES OF THE LESSER SAC-WINGED BAT, *SACCOPTERYX BILINEATA PERSPICILLIFER*. *Amer. Midland Natur.* 87(1): 158-164, 2 figs. Jan. 1972. *WR 145: 24*
[Lawrence Univ., Appleton, Wis.] Abstract: The mortality of young bats due to falls in colonies of the tropical insectivorous bat, *Saccopteryx bilineata perspicillifer* ("lesser sac-winged bat"), a species that roosts in tree cavities in tropical rain forests, can be experimentally reduced by the installation of low artificial ceilings into roosts. When this is done over successive breeding periods, the resulting adult colonies are significantly larger than colonies in which the ceilings were not introduced. Mortality of young bats within roosts may act as a means of regulating colony size.

RABBITS & PIKAS

Bernstein, A. D. [THE ECOLOGY OF THE BIG-EARED PIKA IN THE TIEN-SHAN.] *Fauna Ecol. Rodents* (Moscow) 9: 62-109. 1970. [From J. Mammal. 52(4, suppl.), 1971. In Russian with English summ.] *WR 145: 24*

Chapman, Joseph A., and Donald E. C. Trethewey. MOVEMENTS WITHIN A POPULATION OF INTRODUCED EASTERN COTTONTAIL RABBITS. *J. Wildl. Mgmt.* 36(1): 155-158. Jan. 1972. *WR 145: 24*
[Natur. Resour. Inst., Univ. Md., LaVale.] Abstract: Movements of an established population of introduced eastern cottontail rabbits *(Sylvilagus floridanus)* were studied on the E. E. Wilson Game Management Area near Corvallis, Oregon, during 1967 and 1968. Juvenile males moved greater distances than adult males, and males moved greater distances than females. There were no differences in the movements of juvenile females and adult females.

Evans, James, and Richard E. Griffith. REPRODUCTIVE ANOMALIES IN BLACK-TAILED JACKRABBITS. *J. Mammal.* 53(1): 192-194, 1 fig. Feb. 1972. *WR 145: 24*
[Bur. Sport Fisheries & Wildl., Olympia, Wash.] "This report describes three types of reproductive anomalies in black-tailed jackrabbits *(Lepus californicus)*--extrauterine fetuses, transmigrating ova, and twinning."

Flux, John E. C. VALIDITY OF THE KIDNEY FAT INDEX FOR ESTIMATING THE CONDITION OF HARES: A DISCUSSION. *New Zealand J. Sci.* 14(2): 240-244, 1 fig. June 1971. *WR 145: 24*
Summary: The inclusion of kidney weight in Riney's kidney fat index may be important in reflecting the total metabolism of an animal, not merely body size. Hares [*Lepus europaeus*] in New Zealand accumulate fat during winter as a short-term food store and to allow early breeding, which starts in midwinter. Seasonal

deposition of fat in hares in New Zealand, Scotland, and East Africa shows no direct correlation with available food: hares are thinnest when the environment is most favourable, and fatter in seasonally arid or cold regions. Wild animals subject to predation are unlikely to carry unnecessary fat at any time.

George, John E. DROP-OFF RHYTHMS OF ENGORGED RABBIT TICKS, *HAEMAPHYSALIS LEPORISPALUSTRIS* (PACKARD, 1896) (ACARI: IXODIDAE). *J. Med. Entomol.* 8(5): 461-479, 22 figs. 15 Dec. 1971. *WR 145: 25*
[Tex. Tech. Univ., Lubbock.]

Iversen, J. O., G. L. Hoff, T. M. Yuill, and R. P. Hanson. GASTRIC LESIONS IN THE SNOWSHOE HARE. *J. Wildl. Dis.* 8(1): 7-9, 2 figs. Jan. 1972. *WR 145: 25*
[Univ. Saskatchewan, Saskatoon, Saskatchewan, Canada.] Abstract: During routine necropsies of snowshoe hares, *Lepus americanus*, captured in north-central Alberta, lesions in the glandular portion of the stomach were observed in 34.5% (444/1286) of trapped hares as opposed to 10% (12/120) of snared hares and 0% (0/10) of shot hares. Among the trapped hares, gastric lesions were almost twice as common in juveniles as in adults, 43.7% (293/670) and 24.5% (151/616) respectively. There was no significant differences in the frequency of lesions between sexes. A gross and a microscopic description of the lesions are presented.

Millar, John S. ADRENAL WEIGHTS IN RELATION TO REPRODUCTIVE STATUS IN THE PIKA, *OCHOTONA PRINCEPS* (RICHARDSON). *Canadian J. Zool.* 48(5): 1137-1140. Sept. 1970. [From J. Mammal. 52(4, suppl.), 1971.] *WR 145: 25*

Puget, A. *OCHOTONA R. RUFESCENS* (GRAY, 1842) EN AFGHANISTAN ET SON ELEVAGE EN CAPTIVITE. [*OCHOTONA R. RUFESCENS* (GRAY, 1842) IN AFGHANISTAN AND ITS RAISING IN CAPTIVITY.] *Mammalia* 35(1): 25-37, illus. 1971. [From Biol. Abstr. 53(1), 1972. In French with English summ.] *WR 145: 25*
[Cent. Rech. Toxicites, Toulouse, France.] After a brief systematic study, methods of capture are described; the geographical distribution, the problems of colony fluctuation and finally the habits of the animals are discussed. The problem of the adaptation and reproduction in captivity of *O. rufescens* captured in Afghanistan is considered. The conditions of habitat, nutrition and the period of gestation and the growth of the young are defined.

Shotts, Emmett B., Jr., and Theodore P. Kistner. NATURALLY OCCURRING CUTANEOUS STREPTOTHRICOSIS IN A COTTONTAIL RABBIT. *J. Amer. Vet. Med. Ass.* 157 (5): 667-670, 2 figs. Sept. 1970. *WR 145: 25*
[Univ. Ga., Athens.] Summary: Cutaneous streptothricosis was diagnosed and *Dermatophilus congolensis* was isolated from cutaneous lesions in the cottontail rabbit *(Sylvilagus floridanus)*. The isolant was found to be biochemically and antigenically similar to isolants obtained from cattle.

Stewart, D. R. M. DIET OF *LEPUS CAPENSIS* AND *L. CRAWSHAYI*. *East African Wildl. J.* 9. p. 161-162. Aug. 1971. *WR 145: 25*
[2 Kychil Lane, Colehill, Wimborne, Dorset, England.]

Stewart, D. R. M. SEASONAL FOOD PREFERENCES OF *LEPUS CAPENSIS* IN KENYA. *East African Wildl. J.* 9. p. 163-166. Aug. 1971. *WR 145: 25*
[2 Kychil Lane, Colehill, Wimborne, Dorset, England.]

Williams, R. T. THE DISTRIBUTION AND ABUNDANCE OF THE ECTOPARASITES OF THE WILD RABBIT, *ORYCTOLAGUS CUNICULUS* (L.), IN NEW SOUTH WALES, AUSTRALIA. *Parasitology* 64(2): 321-330, 1 fig. Apr. 1972. *WR 145: 25*
[CSIRO, Lyneham, Canberra, Australia.]

Andrzejewski, Roman, Hanna Fejgin, and Anna Liro. TRAPPABILITY OF TRAP-PRONE AND TRAP-SHY BANK VOLES. *Acta Theriologica* 16(25): 401-405. Nov. 1971. *WR 145: 26*

[Polish Acad. Sci., Warsaw, Poland.] Abstract: Fifteen individuals exhibiting maximum trappability were chosen from a population of *Clethrionomys glareolus* inhabiting a 4-ha island in a lake. Rodents were caught in the home ranges of these individuals on one permanent trapping site and alternately on a trapping place situated at random in a different place each time. It was found that both trap-prone and trap-shy individuals are more frequently caught on permanent trapping sites than in places chosen at random. Trap-shy individuals are caught more rarely than trap-prone rodents and the percentage of trap-prone individuals being greater in captures on permanent sites.

Barnard, W. P., and J. V. Ernst. COCCIDIAN OF THE COTTON RAT, *SIGMODON HISPIDUS*, IN ALABAMA. *J. Protozool.*, suppl., 18. p. 16. Aug. 1971. [From J. Mammal. 53(1, suppl.), 1972. Abstract only.] *WR 145: 26*

Bazhenov, Yu. I. THERMOREGULATION AT REST AND DURING MUSCLE WORK IN THE LEMMING *LEMMUS OBENSIS*. *Zh. Evol. Biokhim. Fiziol.* 7(5): 540-543. Oct. 1971. [From J. Mammal. 53(1, suppl.), 1972. In Russian with English summ.] *WR 145: 26*

Bovet, Jacques. ON THE SOCIAL BEHAVIOR IN A STABLE GROUP OF LONG-TAILED FIELD MICE *(APODEMUS SYLVATICUS)*. I. AN INTERPRETATION OF DEFENSIVE POSTURES. *Behaviour* 41(1-2): 43-54, 1 fig. 1972. In English with French summ. *WR 145: 26*

[Univ. Laval, Quebec, Canada.] Summary: The social behavior of a group of four adult (two males and two females) long-tailed field mice *(Apodemus sylvaticus)* living together for a long period of time in a large terrarium is described and analyzed. As a rule, the social behavior patterns correspond to those described for other rodent species. Analysis of the occurrence of encounters involving defensive postures with other types of encounters, and the behavior of the mice before they display defensive postures suggest that not only attack and flight, but also amicable and non-social tendencies could be involved in the elicitation of this type of behavior.

Bovet, Jacques. ON THE SOCIAL BEHAVIOR IN A STABLE GROUP OF LONG-TAILED FIELD MICE *(APODEMUS SYLVATICUS)*. II. ITS RELATIONS WITH DISTRIBUTION OF DAILY ACTIVITY. *Behaviour* 41(1-2): 55-67, 5 figs. 1972. In English with French summ. *WR 145: 26*

[Univ. Laval, Quebec, Canada.] Summary: A group of three or four long-tailed field mice *(Apodemus sylvaticus)* living in a large terrarium was observed for three consecutive months. A comparative analysis of their social behavior and temporal distribution of activity shows that there was a simple direct correlation between the number of encounters and the amount of time two or more mice spent together at the surface of the terrarium. It also shows an alternation of social and asocial periods, each of those lasting one or several weeks. In a social period, encounters were frequent, the mice spent much time together and were rarely seen to be active alone. The individual activity patterns were concordant, which contributed to the high amounts of simultaneous activity and of encounters. But in an asocial period, encounters were scarce, little time was spent together and solitary mice were often seen; the socially top ranking animal restricted its activity to certain times of the day and the three other mice to other times of the day, which contributed to the low amount of simultaneous activity and to the low frequency of encounters.

Brain, P. F. THE PHYSIOLOGY OF POPULATION LIMITATION IN RODENTS--A REVIEW. *Commun. Behav. Biol.* 6(2): 115-123. Aug. 1971. [From J. Mammal. 53(1, suppl.), 1972.] *WR 145: 26*

Breed, W. G. THE QUESTION OF INDUCED OVULATION IN WILD VOLES. *J. Mammal.* 53(1): 185-187. Feb. 1972. *WR 145: 26*

[Med. School, Birmingham, England.] *"Microtus agrestis."*

Buchalczyk, Tadeusz, and Jerzy L. Olszewski. BEHAVIOURAL RESPONSE OF FOREST RODENTS AGAINST TRAP AND BAIT. *Acta Theriologica* 16(18): 277-283, 1 fig. Aug. 1971. *WR 145: 27*

[Polish Acad. Sci., Białowieża, Poland.] Abstract: Two types of movements of rodents and their reactions to wooden traps and pitfalls were observed by means of noctovisor and directly during a day. The penetration of trapping devices by these animals does not occur in a mechanical manner but is preceded by apparent interest in the trap. Some rodents may escape from pitfalls by running the walls. This has been confirmed by repeated disappearance of the bait from pitfalls (65% of cases on the average). Wet walls or small amount of water on the bottom make the escape very difficult or impossible. The consumption of two types of bait was compared: bread fried in oil represents a more attractive bait than oat grains.

Conley, Walter H. BEHAVIOR, DEMOGRAPHY, AND COMPETITION IN *MICROTUS LONGICAUDUS* AND *M. MEXICANUS*. *Ph.D. thesis, Tex. Tech Univ.* 51 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(9), 1972.] *WR 145: 27*

Cross, P. C. OBSERVATIONS ON THE INDUCTION OF OVULATION IN *MICROTUS MONTANUS*. *J. Mammal.* 53(1): 210-212. Feb. 1972. *WR 145: 27*

[Univ. Pa., Philadelphia.]

Doty, Richard L., and Robert Kart. A COMPARATIVE AND DEVELOPMENTAL ANALYSIS OF THE MIDVENTRAL SEBACEOUS GLANDS IN 18 TAXA OF *PEROMYSCUS*, WITH AN EXAMINATION OF GONADAL STEROID INFLUENCES IN *PEROMYSCUS MANICULATUS BAIRDII*. *J. Mammal.* 53 (1): 83-99, 5 figs. Feb. 1972. *WR 145: 27*

[Univ. Calif., Berkeley.]

Drickamer, Lee C., and Joan Bernstein. GROWTH IN TWO SUBSPECIES OF *PEROMYSCUS MANICULATUS*. *J. Mammal.* 53(1): 228-231. Feb. 1972. *WR 145: 27*

[N.C. Dep. Mental Health, Raleigh.] *"Peromyscus maniculatus nebrascensis* and *P. m. labecula."*

Farris, Allen Lee. POPULATION DYNAMICS AND HABITAT DISTRIBUTION OF *MICROTUS LONGICAUDUS, MICROTUS MONTANUS*, AND *PEROMYSCUS MANICULATUS* IN SOUTHEASTERN WASHINGTON. *Ph.D. thesis, Wash. State Univ.* 106 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(8), 1972.] *WR 145: 27*

Fedyk, Anna. SOCIAL THERMOREGULATION IN *APODEMUS FLAVICOLLIS* (MELCHIOR, 1834). *Acta Theriologica* 16(16): 221-229, 3 figs. Aug. 1971. In English with Polish summ. *WR 145: 27*

[Polish Acad. Sci., Białowieża, Poland.] Abstract: Oxygen consumption was estimated in relation to ambient temperature in one hour respirometric runs in groups of *A. flavicollis* consisting of 2, 3, 4 and 5 individuals. For comparison similar determinations were carried out with single individuals. In the range of 5-20°C oxygen consumption computed for unit of body weight was found to be correlated with the numbers of individuals in a group. The lowest energy requirements were shown by individuals in groups consisting of 5 mice. Exceptionally at 25°C, due to increased locomotory activity of the animals, groups consisting of 4 and 5 individuals consumed more oxygen than those of 3. Significant economy of energy by social thermoregulation is visible in groups of four or five individuals.

Gashwiler, Jay S. DEER MOUSE MOVEMENT IN FOREST HABITAT. *Northwest Sci.* 45 (3): 163-170, 2 figs. 1971. *WR 145: 27*

[Bur. Sport Fisheries & Wildl., 1027 Trenton Ave., Bend, Oreg.] Summary: In this study, 24% of the deer mice [*Peromyscus maniculatus*] captured on the clearcut were also recaptured the same month in the timber. The greatest number (52%) was caught immediately after the clearcut was burned; no monthly recapture pattern was apparent. Food resources and population densities may have influenced the mobility of deer mice. Heavy tree seed fall did not strongly attract

deer mice from the clearcut to the forest, and sex and age did not significantly influence movement, although adult males had greater average ranges than females. The number of animals recaptured per trap and the average travel data indicated that most of the deer mice traveled from about 450 to 700 ft between the clearcut and the timber. Forest deer mice living within this distance of clearcuts probably cause much of the repopulation problem in forest regeneration by direct seeding.

Goldstein, Bernard. ALLOMETRIC ANALYSIS OF RELATIVE HUMERUS WIDTH AND OLECRANON LENGTH IN SOME UNSPECIALIZED BURROWING MAMMALS. *J. Mammal.* 53(1): 148-156, 3 figs. Feb. 1972. *WR 145: 28*
[San Francisco State Coll., San Francisco, Calif.]

Górecki, Andrzej. METABOLISM AND ENERGY BUDGET IN THE HARVEST MOUSE. *Acta Theriologica* 16(15): 213-220, 3 figs. Aug. 1971. In English with Polish summ. *WR 145: 28*
[Jagiellonian Univ., Kraków, Poland.] Abstract: The average daily metabolic rate *(ADMR)* at 20°C and resting metabolic rate *(RMR)* in the range of ambient temperatures from 0 to 30°C were determined in the harvest mouse. *ADMR* of the harvest mouse with the body weight of 8.7 g amounted to 7.57 ± 1.91 ccm O_2/g h, and the relationship between *ADMR* and body weight *(W)* is expressed by the equation: $ADMR = 22.8\ W^{-.53}$. *RMR* was equal to 19.8 ccm O_2/g h at 0°C and to 5.0 ccm O_2/g h at 30°C. The intensity of chemical thermoregulation in the studied range amounted to approximately 10%/°C. The daily energy budget *(DEB)* of harvest mice computed from the data given above is illustrated by the following equations: DEB kcal/g day $= 3.03\ W^{-.50}$ in summer, and $DEB = 3.05\ W^{-.50}$ in winter.

Grant, P. R., and Ralph D. Morris. THE DISTRIBUTION OF *MICROTUS PENNSYLVANICUS* WITHIN GRASSLAND HABITAT. *Canadian J. Zool.* 49(7): 1043-1052, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 146: 28*
[McGill Univ., Montreal, Quebec, Canada.] A four-year live-trapping study in southern Quebec demonstrated that *M. pennsylvanicus* was distributed randomly in three half acres of enclosed grassland habitat. A simple model is presented which shows how, at different densities, animal distribution varies in relation to the distribution of habitat structure.

Hansson, Lennart. HABITAT, FOOD AND POPULATION DYNAMICS OF THE FIELD VOLE *MICROTUS AGRESTIS (L.)* IN SOUTH SWEDEN. *Viltrevy* 8(4): 267-378, 28 figs. 1971. In English with Swedish summ. *WR 145: 28*
[Univ. Lund, Lund, Sweden.] Studies were conducted in southernmost Sweden (Scania) with a few comparisons with a northern locality.

Hansson, Lennart. SMALL RODENT FOOD, FEEDING AND POPULATION DYNAMICS: A COMPARISON BETWEEN GRANIVOROUS AND HERBIVOROUS SPECIES IN SCANDINAVIA. *Oikos* 22 (2): 183-198, illus. 1971. [From Biol. Abstr. 53(2), 1972. In English with Russian summ.] *WR 145: 28*
[Univ. Lund, Lund, Sweden.] *"Apodemus sylvaticus, Clethrionomys glareolus, and Microtus agrestis."*

Harrison, D. L. OBSERVATIONS ON SOME NOTABLE ARABIAN MAMMALS, WITH THE DESCRIPTION OF A NEW GERBIL *(GERBILLUS*, RODENTIA: CRICETIDAE*). Mammalia* 35(1): 111-125, illus. 1971. [From Biol. Abstr. 53(1), 1972. In English with French summ.] *WR 145: 28*
Gerbillus dasyurus is recorded for the first time from Oman, where it is represented by a new subspecies *G. d. gallaghari* described here, with dark coloration, blackish tail and large tympanic bullae. *G. ohessmani maritimus* is recorded for the first time from the Aden area, South Yemen; *Rattus norvegicus* is recorded from Bahrain. The second known specimen of *Paraechinus hypomelas sabaeus* is described and the characters of this race discussed. Variation in further material of *P. aethiopicus dorsalis* is described and the essential distinguishing features of the two Arabian species of *Paraechinus* are more clearly

defined. A specimen of *Herpestes edwardsi ferrugineus* is recorded from Bahrain Island, and a specimen of *Panthera pardus nimr* from Oman is described. Two specimens of *Felis silvestris tristrami* from Syria and the Trucial Coast of Oman are described and an example of *Gazella subgutturosa marica* from S.E. Arabia is recorded.

Kieckhefer, Robert W. ACTIVE LADY BEETLES UNACCEPTABLE TO *PEROMYSCUS MANICULATUS BAIRDII* AS FOOD. *J. Mammal.* 53(1): 194-196. Feb. 1972. *WR 145: 29*
[Agr. Res. Sta., USDA, Brookings, S. Dak.]

Krebs, Charles J., Barry L. Keller, and Judith H. Myers. *MICROTUS* POPULATION DENSITIES AND SOIL NUTRIENTS IN SOUTHERN INDIANA GRASSLANDS. *Ecology* 52(4): 660-663. Summer 1971. *WR 145: 29*
[Univ. British Columbia, Vancouver, British Columbia, Canada.] Soil sodium levels did not correlate with peak or mean density levels of either *Microtus pennsylvanicus* or *M. ochrogaster*. In *M. pennsylvanicus* 38% of the variation in peak densities could be explained by differences in pH and potassium levels.--Courtesy/ Paul A. Stewart.

Layne, James N. TAIL AUTOTOMY IN THE FLORIDA MOUSE, *PEROMYSCUS FLORIDANUS*. *J. Mammal.* 53(1): 62-71, 3 figs. Feb. 1972. *WR 145: 29*
[Archbold Biol. Sta., Lake Placid, Fla.]

Lubinsky, George, B. R. Jacobsen, and R. W. Baron. WILDLIFE FOCI OF *CAPILLARIA HEPATICA* INFECTIONS IN MANITOBA. *Canadian J. Zool.* 49(8): 1201-1202, illus. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 29*
Populations of *Clethrionomys gapperi* and of *Peromyscus maniculatus*, in which up to 50% of individuals were infected with *Capillaria hepatica*, were found on the south shore of Lake Manitoba, in the Whiteshell area, and in the region of Lake of the Woods. The potential danger of these foci as sources of subclinical human infections with *C. hepatica* is pointed out.

Martinet, L., and F. Spitz. VARIATIONS SAISONNIÈRES DE LA CROISSANCE ET DE LA MORTALITÉ DU CAMPAGNOL DES CHAMPS, *MICROTUS ARVALIS*: ROLE DU PHOTOPERIODISME ET DE LA VÉGÉTATION SUR CES VARIATIONS. [SEASONAL VARIATIONS IN THE GROWTH AND MORTALITY OF THE FIELD VOLE *MICROTUS ARVALIS*: THE ROLE OF PHOTOPERIODISM AND THE VEGETATION ON THESE VARIATIONS.] *Mammalia* 35(1): 38-84, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 29*
[Inst. Nat. Rech. Agron., Jouy-en-Josas, France.]

Petryszyn, Yaroslaw, and Eugene D. Fleharty. MASS AND ENERGY OF DETRITUS CLIPPED FROM GRASSLAND VEGETATION BY THE COTTON RAT *(SIGMODON HISPIDUS)*. *J. Mammal.* 53(1): 168-175, 1 fig. Feb. 1972. *WR 145: 29*
[Fort Hays Kans. State Coll., Hays.] Piles of vegetational clippings made by *Sigmodon hispidus* in a remnant grassland area were collected and analyzed for vegetational composition, dry weight, and caloric content. Population densities of *S. hispidus* were estimated monthly and correlated with the number of clipped piles of vegetation collected each month. During the 1-year study period, *Sigmodon* clipped 315.1 kilograms of vegetation on the 4.85-hectare study area. Seventy-two per cent of the clippings occurred from September to November. The amount of clipped material per rat per month varied from zero in May to 1.3 kilograms in October. The amount of material clipped may not be dependent solely on the density or activity of *S. hispidus*, but possibly also on the condition of the vegetation. Of the net primary production in this area during the study period, 0.4 per cent was clipped by *S. hispidus*.--From abstr.

Phillips, Carleton J., and Brett Oxberry. COMPARATIVE HISTOLOGY OF MOLAR DENTITIONS OF *MICROTUS* AND *CLETHRIONOMYS*, WITH COMMENTS ON DENTAL EVOLUTION IN MICROTINE RODENTS. *J. Mammal.* 53(1): 1-20, 6 figs. Feb. 1972. *WR 145: 29*
[Hofstra Univ., Hempstead, Long Island, N.Y.]

Price, Edward O. NOVELTY-INDUCED SELF-FOOD DEPRIVATION IN WILD AND SEMI-DOMESTIC DEERMICE *(PEROMYSCUS MANICULATUS BAIRDII)*. *Behaviour* 41(1-2): 91-104, 2 figs. 1972. In English with German summ. *WR 145: 30*
[State Univ. Coll. Forestry, Syracuse, N.Y.]

Reichman, O. J., and Robert J. Baker. DISTRIBUTION AND MOVEMENTS OF TWO SPECIES OF POCKET GOPHERS (GEOMYIDAE) IN AN AREA OF SYMPATRY IN THE DAVIS MOUNTAINS, TEXAS. *J. Mammal.* 53(1): 21-33, 4 figs. Feb. 1972. *WR 145: 30*
[Northern Ariz. Univ., Flagstaff.] Abstract: *Pappogeomys castanops* and two subspecies of *Thomomys bottae (T. b. limpiae* and *T. b. texensis)* are found in the Davis Mountains, Texas. The distribution of these taxa has changed in recent years. *T. b. limpiae* and *T. b. texensis* are no longer found at their respective type localities and *Pappogeomys* has expanded its range. In lower Limpia Canyon, the ranges of *T. b. limpiae* and *Pappogeomys* overlap for 1300 meters. This distributional overlap is unstable with *Pappogeomys* expanding its range more than 300 meters in 2 years and *Thomomys* decreasing its range by 160 meters during the same period. The ecology and dynamics of this zone of sympatry are discussed as are the climatic conditions in the Southwest that are suspected causes of observed distributional changes.

Soholt, Lars Frederick. CONSUMPTION OF PRIMARY PRODUCTION BY A POPULATION OF KANGAROO RATS *(DIPODOMYS MERRIAMI)* IN THE MOJAVE DESERT. *Ph.D. thesis, Univ. Southern Calif.* 108 p. 1971. [From Diss. Abstr. Int. B Sci Eng. 32(8), 1972.] *WR 145: 30*

Sutton, John F. NOTES ON SKELETAL VARIATION, TOOTH REPLACEMENT, AND CRANIAL SUTURE CLOSURE OF THE PORCUPINE *(ERETHIZON DORSATUM)*. *Tulane Studies Zool. & Bot.* 17(3&4): 56-62, 2 figs. 17 Feb. 1972. *WR 145: 30*
[Univ. Kans., Lawrence.] Abstract: Variation occurs in many of the cranial elements and in the pattern of the cranial foramina of the porcupine *Erethizon dorsatum*. Tooth eruption and replacement are completed by the end of the second year of life with all molars erupting by the age of 6-8 months and the deciduous premolars replaced between 12-18 months later. Sutures of the skull close in a predictable pattern and closure is correlated with age. Variation in the vertebral number is considerable, with the thoracolumbar region varying from 19-23. The presence of one major sesamoid in the carpals and two in the tarsals has led to some confusion in the terminology used by previous writers.

Taylor, J. Mary, and B. Elizabeth Horner. REPRODUCTION IN THE AUSTRALIAN TREE-RAT *CONILURUS PENICILLATUS* (RODENTIA: MURIDAE). *CSIRO Wildl. Res.* 16(1): 1-9, 14 figs. Nov. 1971. *WR 145: 30*
[Univ. British Columbia, Vancouver, British Columbia, Canada.] Abstract: Breeding in *C. penicillatus* extends over a period of at least 4 months. Reproductive maturity is correlated with general body size, and few instances of sexual quiescence were found among the adults in our midwinter sampling. The usual litter size is two and the sex ratio, one to one. This rat is polyoestrous, a spontaneous ovulator, and appears to undergo a postpartum oestrus.

Winkler, William G., Nathan J. Schneider, and William L. Jennings. EXPERIMENTAL RABIES INFECTION IN WILD RODENTS. *J. Wildl. Dis.* 8(1): 99-103. Jan. 1972. *WR 145: 30*
[Cent. Dis. Control, P.O. Box 363, Lawrenceville, Ga.] Abstract: The potential for wild rodents to serve as inapparent rabies reservoirs in nature has not been well evaluated. In this study five species of rodents were inoculated intramuscularly with rabies virus derived from naturally infected wild animals. Inoculated rodents were observed for behavioral changes, and those which died were tested for rabies. Differences in species susceptibility and salivary gland virus tropism were noted and discussed as these factors might affect the epidemiological potential of rabies in wild rodents.

Wyman, Richard L., and Kurt Schaefer. THE ECTOPARASITES OF *PEROMYSCUS MANICULATUS* IN TEXAS CO., OKLAHOMA. *Southwest. Natur.* 16(344): 435-436. 18 Feb. 1972. *WR 145: 31*
[Ill. State Univ., Normal.]

RATTUS & MUS

Kennelly, James J., Brad E. Johns, and Melvin V. Garrison. INFLUENCE OF STERILE MALES ON FECUNDITY OF A RAT COLONY. *J. Wildl. Mgmt.* 36(1): 161-165, 1 fig. Jan. 1972. *WR 145: 31*
[Denver Wildl. Res. Center, Denver, Colo.] Abstract: Eighty-five percent of the males in one of two colonies of Norway rats *(Rattus norvegicus)* were surgically sterilized. The control and treated colonies produced 130 and 110 young, respectively. The greatest difference noted was in the number of pregnant juveniles at necropsy; nine were pregnant in the control colony but only three in the treated colony. The total number of pregnancies was 38 for the controls and 39 for the treated rats. The results suggest that an antifertility compound exerting an effect similar to vasectomy and affecting many, but not all, of the males in a rat colony would be ineffective in limiting population size.

Newsome, A. E., and P. Crowcroft. OUTBREAKS OF HOUSE-MICE IN SOUTH AUSTRALIA IN 1965. *CSIRO Wildl. Res.* 16(1): 41-47, 1 fig. Nov. 1971. *WR 145: 31*
[Div. Wildl. Res., CSIRO, P.O. Box 84, Lyneham, Canberra, Australia.] There were three plagues of house-mice in South Australia in the autumn of 1965. One was confined to a small plantation of seedling pines, because planting procedures favored the mice. Another covered about 200 square miles of prime wheatlands. The other was a small four-year-old wheat stack heavily infested. This is thought to be the first record of a completely non-breeding population of mice from a cereal stack.--From abstr.

Shumake, Stephen A., R. Dan Thompson, and Charles J. Caudill. TASTE PREFERENCE BEHAVIOR OF LABORATORY VERSUS WILD NORWAY RATS. *J. Comp. Physiol. Psychol.* 77(3): 489-494, 1 fig. 1971. *WR 145: 31*
[Denver Wildl. Res. Center, Denver, Colo.] Domestication has not led to substantial changes in genetically determined taste preference behavior.--From abstr.

SCIURIDS

Adams, Lowell. EVALUATION OF AN *in vitro* TECHNIQUE FOR QUANTITATIVE ASSAY OF ADRENOCORTICAL SECRETION IN THE CALIFORNIA GROUND SQUIRREL. *J. Wildl. Dis.* 8 (1): 10-18, 5 figs. Jan. 1972. *WR 145: 31*
[Univ. Calif., San Francisco.] *"Spermophilus beecheyi."*

Adams, Lowell, and Satoshi Hane. ADRENAL GLAND SIZE AS AN INDEX OF ADRENOCORTICAL SECRETION RATE IN THE CALIFORNIA GROUND SQUIRREL. *J. Wildl. Dis.* 8(1): 19-23, 2 figs. Jan. 1972. *WR 145: 31*
[Univ. Calif., San Francisco.] It is concluded that gland weight is a useful index of secretion rate under steady state or slowly changing conditions. Apparent contradictions to this conclusion in the literature are resolved in discussion.--From abstr.

Blake, Barbara Hibbs. THE ANNUAL CYCLE AND FAT STORAGE IN TWO POPULATIONS OF GOLDEN-MANTLED GROUND SQUIRRELS. *J. Mammal.* 53(1): 157-167, 2 figs. Feb. 1972. *WR 145: 31*
[Drew Univ., Madison, N.J.] *"Spermophilus lateralis."*

Davis, D. Wayne, and John A. Sealander. SEX RATIO AND AGE STRUCTURE IN TWO RED SQUIRREL POPULATIONS IN NORTHERN SASKATCHEWAN. *Canadian Field Natur.* 85(4): 303-308, 3 figs. Oct.-Dec. 1971. *WR 145: 32*

[School Ozarks, Point Lookout, Mo.] Age determination, sex and age ratios of two red squirrel *(Tamiasciurus hudsonicus)* populations were studied in northern Saskatchewan from 1960 to 1966.--From abstr.

Dunford, Christopher. SUMMER ACTIVITY OF EASTERN CHIPMUNKS. *J. Mammal.* 53 (1): 176-180, 1 fig. Feb. 1972. *WR 145: 32*

[Univ. Ariz., Tucson.] *"Tamias striatus."*

Fredrickson, Larry F. SWIMMING ABILITY OF *SPERMOPHILUS RICHARDSONII*. *J. Mammal.* 53(1): 190-191. Feb. 1972. *WR 145: 32*

[S. Dak. State Univ., Brookings.]

Goodrum, Phil D. ADULT FOX SQUIRREL WEIGHTS IN EASTERN TEXAS. *J. Wildl. Mgmt.* 36(1): 159-161, 1 fig. Jan. 1972. *WR 145: 32*

[Bur. Sport Fisheries & Wildl., Nacogdoches, Tex.] Abstract: In the forested region of eastern Texas, 288 livetrapped adult fox squirrels *(Sciurus niger ludovicianus)* were weighed 800 times over a 5-year period, 1965 through 1969. The average weights for the seasons were as follows: winter, 695 grams; spring, 681 grams; summer, 642 grams; and fall, 703 grams. Each year, the mean weight in summer was significantly lower than in other seasons. Weight began to decrease gradually in January, reached a low in August, and then rose sharply from mid-September to mid-December, when there was a short period of stability or slight loss. Weight gain thus took only half the time of weight loss. The marked loss in summer and slight loss in winter are attributed to reduced activity and food intake during extreme temperatures; mean weights of squirrels in summer were inversely related to mean daily maximum temperatures. Contributing factors may have been exposure to elements of the weather, particularly the sun, and to harassment by parasites.

Kavanau, J. Lee, and Carl E. Rischer. INFLUENCES OF AMBIENT TEMPERATURE ON GROUND SQUIRREL ACTIVITY. *Ecology* 53(1): 158-164, 4 figs. Winter 1972. *WR 145: 32*

[Univ. Calif., Los Angeles.] Abstract: Detailed observations of the locomotor activities of antelope ground squirrels reveal what may be an important avenue for thermoregulation. Four squirrels in an indoor enclosure were exposed to temperature cycles of various amplitudes with upper limits from 28° to 37°C. By monitoring properties of the volitional running performance in an activity wheel, sensitive behavioral responses to the temperature changes were detected. The time spent running, the average duration of running bouts, and the speed of running were affected--the first two properties to a much greater extent than the third. In one test the time decreased over 11% per degree rise; in another the length of the running bouts decreased over 8% per degree rise. These behavioral responses are interpreted along thermoregulatory lines. The responses were undetected in previous studies, for the animals either were unable to run or were forced to run continuously at fixed speeds. Since one can determine both behavioral and physiological responses of animals running volitionally, and many mammals will run wheels, this technique has promise for comparative studies of thermoregulation.--Courtesy/ Paul A. Stewart.

Ryckman, Raymond E. PLAGUE VECTOR STUDIES. PART II. THE ROLE OF CLIMATIC FACTORS IN DETERMINING SEASONAL FLUCTUATIONS OF FLEA SPECIES ASSOCIATED WITH THE CALIFORNIA GROUND SQUIRREL. *J. Med. Entomol.* 8(5): 541-549, 10 figs. 15 Dec. 1971. *WR 145: 32*

[Loma Linda Univ., Loma Linda, Calif.] Abstract: Studies were conducted on California ground squirrels confined in 0.4-ha electrically-fenced fields to determine the effects of physical factors in the environment on seasonal fluctuations in the population densities of *Hoplopsyllus anomalus, Diamanus montanus* and *Echidnophaga gallinacea*. The summer-breeding species, *H. anomalus* and *E.*

gallinacea, were greatly restricted in their reproductive activities in the experimental field where moisture was supplemented to keep the soil moist to 1 m in depth; the winter-breeding species, *D. montanus*, was much more reproductively active during the summer in the experimental area where the soil was kept moist. A total of 46,962 fleas was collected from 468 ground squirrels during the course of this study. Trained ferrets were used to pull electrical cables into the ground squirrel burrows to enable the operators to record the relative humidities and temperatures existing at various levels in the burrow systems.

Ryckman, Raymond E. PLAGUE VECTOR STUDIES. PART III. THE RATE DEPARASITIZED GROUND SQUIRRELS ARE REINFESTED WITH FLEAS UNDER FIELD CONDITIONS. *J. Med. Entomol.* 8(6): 668-670. 30 Dec. 1971. *WR 145: 33*

[Loma Linda Univ., Loma Linda, Calif.] Abstract: A total of 48,996 fleas was collected from 143 ground squirrels [*Citellus beecheyi*]. The fleas were in 3 species, *Echidnophaga gallinacea*, *Hoplopsyllus anomalus* and *Diamanus montanus*. When returned to their habitat, most deparasitized animals recovered their normal complement of fleas on or before the third day; and, in most instances, the flea population on the formerly deparasitized squirrels exceeded the normal complement of fleas from the third to the seventh day. Electrical fences were used to confine the ground squirrels.

Ryckman, Raymond E. PLAGUE VECTOR STUDIES. PART IV. A COMPARISON OF INSECTICIDE APPLICATION TECHNIQUES FOR FLEA CONTROL ON GROUND SQUIRRELS. *J. Med. Entomol.* 8(6): 671-674. 30 Dec. 1971. *WR 145: 33*

[Loma Linda Univ., Loma Linda, Calif.] Abstract: An evaluation of the long term residual life of Dieldrin based on the flea index indicated that from the second month through the twelfth month post-treatment the flea index was less than 0.4 fleas per squirrel in 3 of the treated fields, while the control index ranged from 60.5 to 419.5 fleas per host. From the third to the sixth day post-treatment the flea mortality was higher in study areas treated by direct burrow application of Dieldrin (96.3% and 98.0%) than in those study areas where application was by the surface or area method (92.6% and 95.8%). Burrow treatment resulted in a more rapid knockdown of fleas than did surface treatment. These data are based on 89,028 fleas collected from 1423 California Ground Squirrels; the 3 species present of fleas were *Diamanus montanus*, *Hoplopsyllus anomalus*, and *Echidnophaga gallinacea*.

Smith, Christopher C., and David Follmer. FOOD PREFERENCES OF SQUIRRELS. *Ecology* 53(1): 82-91, 1 fig. Winter 1972. *WR 145: 33*

[Kans. State Univ., Manhattan.] Abstract: Gray and fox squirrels show similar preferences for various types of natural foods. Their preferences are based on a combination of two factors; the speed with which they can ingest food energy and the digestibility of the food eaten. The two species of squirrels have essentially the same ability to digest their natural foods. However, five species of nuts differ in their digestibility, ranging in percentage of energy assimilated from about 78% for white oak to 95% in shagbark hickory. The squirrels' efficiency in digesting the kernels of different species of nuts is correlated with the lipid content of the kernels. The niche differences between gray and fox squirrels are not based on food preference or feeding efficiency. Instead, they are probably related to differences in foraging behavior and predator escape behavior which adapt fox squirrels to open forests and forest edges and gray squirrels to dense forests. The annual activity pattern of gray and fox squirrels make the hard-shelled nuts of hickory and walnut the most efficient food in fall and spring and acorns the most efficient food in winter. This change in the relative efficiency of foods results in the squirrels acting as dispersing agents for the seeds of both oaks and hickories in mixed stands of trees.--Courtesy/ Paul A. Stewart.

SCIURIDS--Continued

Smith, Hanley K. A METHOD OF ANALYZING FOX SQUIRREL STOMACH CONTENTS. *Tex. Parks & Wildl. Dep., Tech. Ser.* no. 3. x + 75 p., 114 figs. on 23 pls. 1970. *WR 145: 34*

"Although this manual was specifically designed for use by biologists not trained in plant anatomy and histological techniques, any person with a basic knowledge of the flora of East Texas and of the habits of fox squirrels [*Sciurus niger*] should be able to use it."

Thompson, Marvin Pete, Jr. FEEDING AND BURROWING EFFECTS OF WOODCHUCKS *(MARMOTA MONAX)* ON OLD FIELD VEGETATION. *Ph.D. thesis, Southern Ill. Univ.* 127 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(9), 1972.] *WR 145: 34*

Wadsworth, Carl E. OBSERVATIONS OF THE COLORADO CHIPMUNK IN SOUTHEASTERN UTAH. *Southwest. Natur.* 16(3&4): 451-454. 18 Feb. 1972. *WR 145: 34*

[Church Coll. Hawaii, Laie.] Ecology and behavioral notes on *Eutamias quadrivittatus.*

Yeaton, Richard I. SOCIAL BEHAVIOR AND SOCIAL ORGANIZATION IN RICHARDSON'S GROUND SQUIRREL *(SPERMOPHILUS RICHARDSONII)* IN SASKATCHEWAN. *J. Mammal.* 53(1): 139-147, 1 fig. Feb. 1972. *WR 145: 34*

[Univ. Calif., Los Angeles.] Abstract: Richardson's ground squirrels, *Spermophilus richardsonii*, are territorial in Saskatchewan. Males defend territories prior to, and during, the mating period only. Female territorial behavior is apparent from 1 week after emergence until hibernation. Female territories are retained from year to year by one individual or are transmitted from a female of one generation to a related female of the next. This behavior may promote a decrease in agonistic encounters in the spring inasmuch as fewer interactions would be needed to re-establish territorial boundaries. Recognition results in a reduction of fighting between relatives and also may be important in the initial learning of territorial boundaries by the young. There was a differential utilization of habitat resulting in adult males being active from mid-March to early June, adult females from early April to mid-July, and some young ground squirrels from mid-May until October. The early disappearance of adults could be one means of limiting exploitation of resources and increasing survival of the young. Peaks of agonistic behavior are correlated with the establishment of territories in the spring and with increases in the home range movements of young residents in midsummer. The peak in cohesive behavior is correlated with the emergence of young and results primarily from play with, and recognition of related individuals. Young males had a greater tendency to disperse than any other age and sex, a tendency which would promote outbreeding in a population where related females maintain the same territory from year to year.

BEAVER

Dickinson, Nathaniel R. AERIAL PHOTOGRAPHS AS AN AID IN BEAVER MANAGEMENT. *N.Y. Fish & Game J.* 18(1): 57-61, [4] figs. Jan. 1971. *WR 145: 34*

[N.Y. State Dep. Environ. Conserv., Albany.]

Panfil, Jan. BOBRY NA OBSZARZE WOJEWÓDZTWA OLSZTYŃSKIEGO. [THE BEAVERS IN THE PROVINCE OF OLSZTYN.] *Chrońmy Przyrodę Ojczystą* 27(4): 55-59, 3 figs. July-Aug. 1971. In Polish. *WR 145: 34*

"Castor fiber."

Wilsson, Lars. OBSERVATIONS AND EXPERIMENTS ON THE ETHOLOGY OF THE EUROPEAN BEAVER *(CASTOR FIBER* L.) / A STUDY IN THE DEVELOPMENT OF PHYLOGENETICALLY ADAPTED BEHAVIOUR IN A HIGHLY SPECIALIZED MAMMAL. *Viltrevy* 8(3): 115-266, 55 figs. 1971. In English with Swedish summ. *WR 145: 34*

Locomotion; feeding; sleep and rest; care of fur; digging, building of lodges, dams and winter stores; protection against enemies; and social behavior and reproduction of the European beaver are major topics of discussion.

BEAVER--Continued

Żurowski, Wirgiliusz, Jan Kisza, and Antoni Kruk. COMPOSITION OF MILK OF EUROPEAN BEAVERS, *CASTOR FIBER* LINNAEUS, 1758. *Acta Theriologica* 16(25): 405-408. Nov. 1971. *WR 145: 35*

[Polish Acad. Sci., Piss, Poland.] Abstract: Seven samples of milk were collected from 4 beaver females during various stages of lactation. The application of tranquiline and oxytocin significantly facilitated milk sampling. The beaver milk is characterized by a high dry matter (24.1%), fat (11.7%), and total protein (8.9%) contents, and hence shows a high nutritive value. Marked differences in the milk composition were observed depending on the period of lactation.

MUSKRAT & NUTRIA

Paul, John R., Lyle E. Hanson, Paul R. Schnurrenberger, and Russell J. Martin. *LEPTOSPIRA INTERROGANS* SEROTYPES *BALLUM* AND *GRIPPOTYPHOSA* ISOLATED FROM THE MUSKRAT. *J. Wildl. Dis.* 8(1): 54-56. Jan. 1972. *WR 145: 35*

[Ill. State Mus., Springfield.] *"Ondatra zibethicus."*

Teodoreanu, M. CONTRIBUTII LA STUDIUL RASPINDIRII BIZAMULUI *(ONDATRA ZIBETHICA)* IN R. S. ROMANIA. NOTA I. [CONTRIBUTIONS TO THE STUDY OF MUSKRAT *(ONDATRA ZIBETHICA)* DISTRIBUTION IN ROMANIA (I).] *Stud. Univ. Babes-Bolyai Ser. Biol.* 16(1): 133-136. 1971. [From Biol. Abstr. 53(2), 1972. In Romanian with Russian and English summ.] *WR 145: 35*

BEARS

Finegan, R. P. GRIZZLY BEAR HARVESTS BY RESIDENT HUNTERS 1965-1970. *British Columbia Fish & Wildl. Branch.* 63 p., unpaged. Nov. 1971. *WR 145: 35*

Contains: Annual grizzly bear harvest for period 1965-1970, Alterations in management areas, Summary of resident and non-resident grizzly bear harvests 1965-1969, and Game management area maps 1966 and 1968.

Frame, George W. OCCURRENCE OF POLAR BEARS IN THE CHUKCHI AND BEAUFORT SEAS, SUMMER 1969. *J. Mammal.* 53(1): 187-189, 1 fig. Feb. 1972. *WR 145: 35*

[Utah Coop. Wildl. Res. Unit, Logan.] *"Ursus maritimus."*

Greer, K., and V. Craig. BEAR HUNTING IN MONTANA. *Mont. Fish & Game Dep.* 7 p., illus. June 1970. *WR 145: 35*

[Mont. Fish & Game Dep., Helena.] Guide to distinguishing black bear from grizzly bear.

Jenness, Robert, Albert W. Erickson, and John J. Craighead. SOME COMPARATIVE ASPECTS OF MILK FROM FOUR SPECIES OF BEARS. *J. Mammal.* 53(1): 34-47, 7 figs. Feb. 1972. *WR 145: 35*

[Univ. Minn., St. Paul.] Milk specimens obtained from 26 individual bears representing *Ursus americanus, U. maritimus,* three subspecies of *U. arctos,* and *Helarctos malayanus* were analyzed for gross composition and were characterized for carbohydrates, fats, and proteins.--From abstr.

Nero, Robert W. THE GREAT WHITE BEARS. *Provinces Manitoba* (Winnipeg, Canada) *Dep. Mines, Resour. & Environ. Mgmt.* 16 p., illus. Oct. 1971. *WR 145: 35*

"Thalarctos maritimus."

Świeboda, Maria. NIEDŹWIEDŹ BIAŁY W NIEBEZPIECZEŃSTWIE. [THE POLAR BEAR IN DANGER.] *Chrońmy Przyrodę Ojczystą* 24(4): 50-51. July-Aug. 1968. In Polish. *WR 145: 35*

RACCOON, RINGTAIL, COATI

Schneider, Dean G., L. David Mech, and John R. Tester. MOVEMENTS OF FEMALE RACCOONS AND THEIR YOUNG AS DETERMINED BY RADIO-TRACKING. *Anim. Behav. Monogr.* 4(1): 1-43, 11 figs. 1971. *WR 145: 36*
[Carleton Coll., Northfield, Minn.] First detailed analysis of behavior and movements of mother raccoons, *Procyon lotor*, and their cubs from the end of winter dormancy through the period of birth, growth, and development of the young, until they retire to the winter den in the fall.--From summ.

Sealander, John A., and Philip S. Gipson. RANGE EXTENSION OF RINGTAIL CAT INTO ARKANSAS. *Southwest. Natur.* 16(344): 458-459. 18 Feb. 1972. *WR 145: 36*
[Univ. Ark., Fayetteville.] "This specimen is the first recorded for Arkansas and extends the range of the species northeastward approximately 250 miles from the nearest published locality in Henderson County, Texas."

MUSTELIDS

Burns, John James. THE ECOLOGY, ECONOMICS, AND MANAGEMENT OF MINK IN THE YUKON-KUSKOKWIM DELTA, ALASKA. *M.S. thesis, Univ. Alaska.* xi + 114 p., 15 figs. May 1964. *WR 145: 36*

Heráň, Ivan. SOME NOTES ON DENTITION IN MUSTELIDAE. *Vestn. Cesk. Spol. Zool.* 35(3): 199-204, illus. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 36*
[Nat. Mus., Václavské nám. 68, Prague, Czechoslovakia.] *"Meles meles* and *Lutra lutra."*

Poole, Trevor B. POLECATS. *Forestry Comm.: Forest Record* no. 76. 17 p., 14 figs. 1970. Available from Her Majesty's Stationery Office (London) at 2s 6d. *WR 145: 36*
[Univ. Coll. Wales, Aberystwyth, Wales.] Distribution, habitat, home, molting and pelage, hunting and diet, breeding, senses, locomotion, vocalization, enemies, and parasites and diseases of *Mustela putorius* and its relationship to *Mustela furo* are major topics of discussion.

Sargeant, Alan B., and Dwain W. Warner. MOVEMENTS AND DENNING HABITS OF A BADGER. *J. Mammal.* 53(1): 207-210, 1 fig. Feb. 1972. *WR 145: 36*
[Northern Prairie Wildl. Res. Center, Jamestown, N. Dak.] *"Taxidea taxus."*

Sheets, Robert G., and Raymond L. Linder. FOOD HABITS OF THE BLACK-FOOTED FERRET *(MUSTELA NIGRIPES)* IN SOUTH DAKOTA. *Proc. S. Dak. Acad. Sci.* 48: 58-61. 1969. *WR 145: 36*
[S. Dak. State Univ., Brookings.] *"Mustela nigripes."*

Storm, G. L. DAYTIME RETREATS AND MOVEMENTS OF SKUNKS ON FARMLANDS IN ILLINOIS. *J. Wildl. Mgmt.* 36(1): 31-45, 2 figs. Jan. 1972. *WR 145: 36*
[Univ. Minn., Minneapolis.] Abstract: Studies concerning retreats and movements of striped skunks *(Mephites mephites)* were conducted in northwestern Illinois from 1961 to 1965 with the use of radio-tracking equipment. Skunks regularly bedded aboveground in croplands and buildings, and underground in dens during the day in spring and summer. Forty-three skunks spent an average of 1.6 consecutive days at each retreat used during the period of May 1 to November 15. In winter, skunks were restricted almost exclusively to underground retreats, buildings, and piles of brush and lumber, and both sexes were confined to retreats for continuous periods of at least 30 days. Of 333 underground retreats used by radio-tagged animals, 212 (64 percent) were associated with fencerows. Waterways were used intensively for day retreats. Apparently, fencerows and waterways received intensive use as day retreats, because these habitats are less disturbed than others by farm-associated activities. Males, both adults and juveniles, tended to move greater distances than females during the late summer and fall. The daily movements were restricted to an area within 1 mile of the previous day's retreat. At night, radio-tagged skunks were located in

fields of hay and pasture more often than was expected, whereas roads and fields of oats and corn were frequented less than was expected, based on the proportionate availability of these habitats. There was no evidence that the degree and direction of slopes influenced the movements of skunks during the summer and fall.

DOGS, WOLVES, FOXES

Hawthorne, Vernon M. COYOTE FOOD HABITS IN SAGEHEN CREEK BASIN, NORTHEASTERN CALIFORNIA. *Calif. Fish & Game* 58(1): 4-12. Jan. 1972. *WR 145: 37*
[Univ. Calif., Sagehen Creek Field Sta., Truckee.] Abstract: The food habits of coyotes *(Canis latrans)* in the vicinity of Sagehen Creek basin were investigated by analyzing 384 scats, of which 154 were collected fresh. The data from these dated droppings were grouped into winter, spring, and summer categories. Meadow mice were the most important food, occurring in 47.7% of the scats. Deer were second and cattle, probably all carrion, were third, with frequencies of 35.2% and 11.5% respectively. Of lesser importance in the diet were the following mammals: pocket gopher, 6.8%; rabbit, 5.7%; marmot, 3.9%; golden-mantled ground squirrel, 3.9%; porcupine, 3.7%; and sheep, 3.7%. Insects and birds were found in 5.5 and 3.7%, respectively, of the scats. Twenty-three scats were collected during the summer from trapped juveniles and were analyzed and discussed separately. Juvenile coyotes utilized most of the same food items as adults, but in somewhat different proportions.

Kuyt, E. FOOD STUDIES OF WOLVES ON BARREN-GROUND CARIBOU RANGE IN THE NORTHWEST TERRITORIES. *Canadian Wildl. Serv. Prog. Notes* no. 23. 20 p., 3 figs. Nov. 1971. In French and English. *WR 145: 37*
[Canadian Wildl. Serv., Box 508, Fort Smith, N.W.T., Canada.]

Martensz, P. N. OBSERVATIONS ON THE FOOD OF THE FOX, *VULPES VULPES* (L.), IN AN ARID ENVIRONMENT. *CSIRO Wildl. Res.* 16(1): 73-75. Nov. 1971. *WR 145: 37*
[Div. Wildl. Res., CSIRO, P.O. Box 109, Canberra, Australia.]

Paradiso, John L., and Ronald M. Nowak. A REPORT ON THE TAXONOMIC STATUS AND DISTRIBUTION OF THE RED WOLF. *U.S. Fish Wildl. Serv. Spec. Sci. Rep. Wildl.* no. 145. ii + 36 p. 1971. For sale at 45¢ from Supt. Documents, GPO, Washington, D.C. *WR 145: 37*
Comparison of 213 skulls of *Canis rufus* with 214 *C. lupus* and 336 *C. latrans* indicates that the red wolf is a distinct species. In size and proportion, *C. rufus* appears intermediate between coyote and gray wolf, while certain trenchant cranial and dental details suggest coyote affinity. Before human disruption of the environment, *rufus, lupus,* and *latrans* maintained their distinct status, and available specimens show no evidence that the red wolf intergraded with either coyote or gray wolf. Apparently extensive habitat modification and decline of the red wolf population, both attributable to man, led to the breakdown of isolation and the formation of a hybrid swarm in central Texas. Specimens indicate that as red wolves were extirpated in eastern Texas and elsewhere, the swarm moved eastward to occupy the niche that was created. By 1969, the swarm had spread throughout most of eastern Texas and had moved into Louisiana. Pure red wolves continued to survive only in a limited area along the Gulf Coast from Brazoria County (east of the Brazos River) east to Chambers and Orange Counties, Texas, and in Cameron Parish.--From abstr.

Stone, Ward B., Eugene Parks, and Bruce L. Weber. THE LITTLE FOXES. [N.Y.] *Conservationist* 26(4): 8-9, 47, illus. Feb.-Mar. 1972. *WR 145: 37*
The red fox population, *Vulpes fulva*, in New York is being decimated by a plague of sarcoptic mange.

DOGS, WOLVES, FOXES--Continued

Stuht, John N., and William G. Youatt. HEARTWORMS AND LUNG FLUKES FROM RED FOXES IN MICHIGAN. *J. Wildl. Mgmt.* 36(1): 166-170, 2 figs. Jan. 1972. *WR 145: 38*

[Rose Lake Wildl. Res. Sta., East Lansing, Mich.] Abstract: During the winter of 1970-71, 39 red foxes *(Vulpes fulva)* were trapped from an area where heartworm *(Dirofilaria immitis)* is endemic in dogs. Eleven of the 39 foxes (five males and six females) had heartworms in the right ventricles, or pulmonary arteries, or both. Although a few adult filarids contained larvae in an advanced stage, no microfilariae were seen in blood smears prepared from the peripheral blood. Incidental to the finding of heartworms was the presence of the lung fluke *(Paragonimus kelliocotti)* encysted in the lungs of four foxes. This is the first report of the heartworm in any free-living wild mammal in Michigan and a new host for the lung fluke in this state.

Sumiński, Piotr. JESZCZE RAZ W OBRONIE WILKA. [ANOTHER APPEAL IN FAVOUR OF THE WOLF.] *Chrońmy Przyrodę Ojczystą* 26(5): 59-61. Sept.-Oct. 1970. In Polish. *WR 145: 38*

CATS

Little, John W., J. P. Smith, F. F. Knowlton, and R. R. Bell. INCIDENCE AND GEOGRAPHIC DISTRIBUTION OF SOME NEMATODES IN TEXAS BOBCATS. *Tex. J. Sci.* 22(4): 403-407. 20 Sept. 1971. *WR 145: 38*

[Smith: Tex. A&M Univ., College Station.] Abstract: Nine adult bobcats, *Lynx rufus* (Schreber, 1777), from Brewster County in West Texas and Nueces and Duval Counties in South Texas were examined for nematodes. All were parasitized, but the Brewster County bobcats harbored fewer helminths than hosts trapped in Nueces and Duval Counties. It is suggested that this may be due to ecological factors. *Ancylostoma caninum* (Ercolani, 1859) and *Toxascaris leonina* (von Linstow, 1902) were the most prevalent species in both individual numbers and the number of bobcats they infected. The incidence of these helminths was compared to surveys of bobcat nematodes from other areas of the United States.

BIG GAME, GENERAL

Ables, E. D., and J. Ables. RADIO-TRACKING STUDIES OF A KENYA HARTEBEEST. *East African Wildl. J.* 9. p. 145-146, 1 fig. Aug. 1971. *WR 145: 38*

[Tex. A&M Univ., College Station.] *"Alcelaphus buselaphus."*

Alendal, Einar. TIDLIG OG GOD FORMERING HOS MOSKUSFE PA DOVREFJELL. [EARLY SEXUAL MATURITY AND HIGH FECUNDITY IN WILD MUSKOXEN IN NORWAY.] *Fauna* (Oslo) 24(2): 96-100, illus. 1971. [From Biol. Abstr. 53(2), 1972. In Norwegian with English summ.] *WR 145: 38*

[Univ. Bergen, Bergen, Norway.] *"Ovibos moschatus."*

Bannikov, A. G., and L. V. Zhirnov. THE BOKHARAN DEER IN THE USSR. *Oryx* 11 (1): 50-61, illus. May 1971. *WR 145: 38*

With a total population estimated at under 500, mostly living in forests that are constantly under threat of felling, the Bokharan deer [*Cervus elaphus bactrianus*] or hangul is in serious danger of extinction. This is a red deer subspecies confined to the Turkmenistan-Afghanistan frontier region, and closely akin to the Kashmir hangul.--From abstr.

Best, E. B., A. W. Palmer, T. Shephard, and V. J. Wilson. SOME NOTES ON THE PRESENT DAY STATUS OF ROAN *HIPPOTRAGUS EQUINUS*, IN RHODESIA. *Arnoldia* 5(2): 1-11, 1 fig. 5 Nov. 1970. *WR 145: 38*

[Wild Life Soc. Rhodesia.] Results of investigation of the status of roan antelope, *Hippotragus equinus*, by the field section of the Matabeleland Branch of the Wild Life Society of Rhodesia.

Bradley, Robert M. WARTHOG *(PHACOCHOERUS AETHIOPICUS* PALLAS) BURROWS IN NAIROBI NATIONAL PARK. *East African Wildl. J.* 9. p. 149-152, 3 figs. + 1 pl. Aug. 1971. *WR 145: 39*
[P.O. Box 3134, Arusha, Tanzania.]

Brüggemann, Ute. UNTERSUCHUNGEN ÜBER DEN STICKSTOFF-STOFFWECHSEL IM PANSEN-INHALT VON ROTWILD *(CERVUS ELAPHUS HIPPELAPHUS* ERXLEBEN 1771) UND REHWILD *(CAPREOLUS CAPREOLUS CAPREOLUS* LINNÉ 1758). [INVESTIGATIONS INTO NITROGEN METABOLISM IN THE RUMEN OF THE RED DEER *(CERVUS ELAPHUS HIPPELAPHUS)* AND THE ROE DEER *(CAPREOLUS CAPREOLUS CAPREOLUS).*] *Ph.D. thesis, Univ. Munich.* 1 + 112 p., 32 figs. 1967. In German. *WR 145: 39*

Cadman, W. A. FALLOW DEER. *Forestry Comm. Leaflet* no. 52. 39 p., 18 figs. 1966. Available from Her Majesty's Stationery Office (London) at 2s 6d. *WR 145: 39*
Distribution, description, sign, antler development, habitat and behavior, food, reproduction, damage, control, harvest, and disease of the fallow deer.

Child, Graham, Richard Parris, and Elias le Riché. USE OF MINERALISED WATER BY KALAHARI WILDLIFE AND ITS EFFECTS ON HABITATS. *East African Wildl. J.* 9. p. 125-142, 2 figs. + 1 pl. Aug. 1971. *WR 145: 39*
[P.O. Box 131, Gaberone, Botswana.] It is suggested that, at the present level of knowledge, mobile wildebeest populations can be stabilized by the provision of relatively potable water, and mineralized water may be used to raise the levels of springbok, hartebeest and gemsbok populations. However, as the water is less of a limiting factor than for species requiring regular drinking water, the increase in density may be relatively limited and so less of a danger to the maintenance of surrounding habitats.--From summ.

Clark, Keith A., R. M. Robinson, L. L. Weishuhn, G. W. Litton, and R. G. Marburger. CASEOUS LYMPHADENITIS IN PRONGHORNS *(ANTILOCAPRA AMERICANA).* *J. Wildl. Dis.* 8(1): 67-71, 2 figs. Jan. 1972. *WR 145: 39*
[Tex. A&M Univ., College Station.] Abstract: Caseous lymphadenitis was diagnosed in two mature pronghorns on the basis of gross and histological examinations. Evidence suggests that the infection was acquired from domestic sheep, which had formerly occupied the same range.

Dieterich, Robert A., and Jack R. Luick. REINDEER IN BIOMEDICAL RESEARCH. *Lab. Anim. Sci.* 21(6, Part I): 817-824, 1 fig. Dec. 1971. *WR 145: 39*
Successful technics in the care and management of reindeer, *Rangifer tarandus*, under laboratory conditions are described. Reindeer adapt to most experimental conditions provided reasonable attention is given to feeding programs, water supply, and ambient temperature. The reindeer respond well to conventional livestock drug therapy and to experimental surgery, including ruminal and esophageal fistulation, vasectomy, etc. Husbandry practices, disease problems, and artificial insemination technics are described, and normal blood profiles for enzyme activity, protein constituents, biochemical assays, and cell morphology are listed.--From summ.

Duncan, Patrick. IMMOBILISATION OF TOPI. *East African Wildl. J.* 9. p. 152. Aug. 1971. *WR 145: 39*
[P.O. Box 3134, Arusha, Tanzania.] *"Damaliscus korrigum jimela."*

Ebedes, H. THE CAPTURE OF PLAINS ZEBRA *EQUUS BURCHELLI ANTIQUORUM*, H. SMITH, 1841, WITH M-99 (RECKITT) AND TRANQUILLIZERS IN THE ETOSHA NATIONAL PARK. *Madoqua*, Ser. I, no. 3. p. 67-76. 1971. *WR 145: 39*
[Natur. Conserv. & Tourism Branch, South West Africa.]

Edgerton, Paul J., and Justin G. Smith. SEASONAL FORAGE USED BY DEER AND ELK ON THE STARKEY EXPERIMENTAL FOREST AND RANGE, OREGON. *U.S. Forest Serv. Res. Pap. PNW* 112. p. 1-12, illus. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 40*

Seasonal forage use by mule deer *(Odocoileus hemionus hemionus)* and Rocky Mountain elk *(Cervus canadensis nelsoni)* was determined in the 3 major habitats--open forest, dense forest, and grassland--that characterize the ponderosa pine-Douglas-fir *(Pinus ponderosa-Pseudotsuga menziesii)* vegetation type of the Blue Mountains of eastern Oregon. Food grades derived from data on diet and forage abundance were used to compare the habitats as sources of forage. Open forest land rated highest in spring, summer, and fall. This habitat had a season-long abundance of forage, particularly elk sedge *(Carex geyeri)*, a highly preferred grasslike plant. Grassland rated second in the spring when succulent forbs were abundant but dropped to third during the summer and fall periods when grassland plants were largely dry and unpalatable. Deer and elk then sought food as well as cover in the forest habitats. Although low-growing shrubs contributed most to the dense forest food grade, that habitat was probably more important as cover than as a source of food.

Follis, Thomas B., Warren C. Foote, and J. Juan Spillett. OBSERVATION OF GENITALIA IN ELK BY LAPAROTOMY. *J. Wildl. Mgmt.* 36(1): 171-173, 1 fig. Jan. 1972. *WR 145: 40*

[Utah State Univ., Logan.] Abstract: A laparotomy technique useful for ascertaining the reproductive process in females is described for exteriorizing the ovaries and uterus of elk *(Cervus canadensis)*. Restraint with a squeeze chute, tranquilizer, and local anesthetic was adequate. Entry into the abdominal cavity was gained through the left paralumbar fossa. Exteriorization of the ovaries and uterus was possible in 16 of 18 cows laparotomized. All animals recovered completely and no postoperative complications were observed.

Garrett, J. R., G. J. Pon, and D. J. Arosteguy. ECONOMICS OF BIG GAME RESOURCE USE IN NEVADA. *Agr. Exp. Sta., Univ. Nev.* iv + 22 p., 5 figs. Oct. 1970. *WR 145: 40*

[Univ. Nev., Reno.]

Geerling, C., and J. Bokdam. THE SENEGAL KOB, *ADENOTA KOB KOB* (ERXLEBEN), IN THE COMOE NATIONAL PARK, IVORY COAST. *Mammalia* 35(1): 17-24. 1971. [From Biol. Abstr. 53(1), 1972. In English with French summ.] *WR 145: 40*

[Agr. Univ., Wageningen, Netherlands.]

Henshaw, John, and Julius Ayeni. SOME ASPECTS OF BIG-GAME UTILIZATION OF MINERAL LICKS IN YANKARI GAME RESERVE, NIGERIA. *East African Wildl. J.* 9. p. 73-82, 3 figs. + 1 pl. Aug. 1971. *WR 145: 40*

[Box 593, College, Alaska.] Summary: At least ten major mineral licks occur along the Gaji River which bisects the Yankari Game Reserve. The licks show varying degrees of utilization and have craters of up to 1200m^3 in volume. Three hundred and eighty five hours of observation were kept at one of the licks. Its use by different species was highly variable. Some species occurring in the reserve made no visits to the lick, whereas Western hartebeest (51 groups), waterbuck (53 groups) and warthog (276 groups) made frequent visits. Lick use was much greater in the daytime than at night, with the peak occurring around 1400 h. A limited number of soil samples (29) were analysed but no single element can be considered as the factor attracting wildlife. However, the lick areas were richer in most minerals than were samples of soil from drier habitat in the open woodland. It is possible that significantly increased lick use might in the future indicate degrading environmental conditions in the drier parts of the reserve. If hides are constructed, the commonly utilized licks will provide excellent opportunities for behaviour observation and photography by tourists.

Hvidberg-Hansen, H., and A. de Vos. REPRODUCTION, POPULATION AND HERD STRUCTURE OF TWO THOMSON'S GAZELLE *(GAZELLA THOMSONII GUNTHER)* POPULATIONS. *Mammalia* 35(1): 1-16, illus. 1971. [From Biol. Abstr. 53(1), 1972. In English with French summ.] *WR 145: 41*
[FAO, Rome, Italy.]

Jarman, P. J., and P. E. Mmari. SELECTION OF DRINKING PLACES BY LARGE MAMMALS IN THE SERENGETI WOODLANDS. *East African Wildl. J.* 9. p. 158-161, 1 fig. Aug. 1971. *WR 145: 41*
[P.O. Box 3134, Arusha, Tanzania.]

Joubert, Eugene. OBSERVATIONS ON THE HABITAT PREFERENCES AND POPULATION DYNAMICS OF THE BLACK-FACED IMPALA *AEPYCEROS PETERSI* BOCAGE, 1875, IN SOUTH WEST AFRICA. *Madoqua*, Ser. I, no. 3. p. 55-65, 2 figs., 2 pls. 1971. *WR 145: 41*
[Natur. Conserv. & Tourism Branch, South West Africa.]

Joubert, Eugene. THE PAST AND PRESENT DISTRIBUTION AND STATUS OF THE BLACK RHINOCEROS *(DICEROS BICORNIS* LINN. 1758*)* IN SOUTH WEST AFRICA. *Madoqua*, Ser. I, no. 4. p. 33-43, [3 figs.]. 1971. *WR 145: 41*
[Natur. Conserv. & Tourism Branch, South West Africa.]

Joubert, E., and F. C. Elcff. NOTES ON THE ECOLOGY AND BEHAVIOUR OF THE BLACK RHINOCEROS *DICEROS BICORNIS* LINN. 1758 IN SOUTH WEST AFRICA. *Madoqua*, Ser. I, no. 3. p. 5-53, 10 figs., 24 pls. 1971. *WR 145: 41*
[Natur. Conserv. & Tourism Branch, South West Africa.]

Kelsall, John P. THE NORTHERN LIMITS OF MOOSE *(ALCES ALCES)* IN WESTERN CANADA. *J. Mammal.* 53(1): 129-138, 1 fig. Feb. 1972. *WR 145: 41*
[Canadian Wildl. Serv., Edmonton, Alberta, Canada.] Abstract: Published and unpublished distributional records are presented for moose *(Alces alces)* near treeline and on the tundra between Hudson Bay and the Alaska-Yukon boundary. Moose appear to occur regularly on much of the northwestern tundra between Horton River and Alaska, and locally in the Coppermine area--probably in response to the food supply provided by extensive willow thickets. They have been seen irregularly in many other places on the tundra. There has been an increase in the number of observations of moose in recent years. This increase may reflect either an upward response by moose populations to succession following fire in coniferous forests near treeline, or increased human mobility and travel (or both), rather than a long term northward expansion of the moose population.

Kerr, Michael A., and Rupert Fothergill. BLACK RHINOCEROS IN RHODESIA. *Oryx* 11(2-3): 129-134. Sept. 1971. *WR 145: 41*
[Dep. Nat. Parks & Wild Life Mgmt., Salisbury, Rhodesia.] *"Diceros bicornis."*

Klein, David R., and Helmut Strandgaard. FACTORS AFFECTING GROWTH AND BODY SIZE OF ROE DEER. *J. Wildl. Mgmt.* 36(1): 64-79, 8 figs. Jan. 1972. *WR 145: 41*
[Alaska Coop. Wildl. Res. Unit, College.] Abstract: Differences in body size of roe deer *(Capreolus capreolus)* in four study areas in Denmark were investigated in relation to climate, soils, vegetation types and forest cultures, quality of available forage, population density of roe deer, and other environmental factors. Rumen samples, body weights and measurements, reproductive tissues, and lower jaws were obtained from 73 deer during the study. Body weights and measurements and sex and age data were available from several hundred deer from earlier studies. Field-dressed weight, length of the lower jaw, and femur length showed significant differences among the study areas. The largest deer and those with the most rapid growth were from the two areas that had lower soil fertility, lower ratios of agricultural land to the forest area, lower ratios of perimeter to total forest area, and lower densities of deer. Chemical analyses of washed and unwashed rumen contents indicated that the forage being consumed by the deer was of essentially equal quality on the four study areas. In Denmark, soil quality appears to be a primary factor determining density of

roe deer or biomass but does not appear to directly regulate body size. Body size is most directly related to population density. The mechanisms by which density influences body size are apparently social pressures, which affect energy expenditure and food intake, and competition during spring and early summer when foods of high nutritive quality may be limited and physiological demands of the deer are greatest.

Kryziak, Kazimierz. UTRWALA SIE ISTNIENIE ŻUBRA. [THE BISON BECOMES WELL STABILIZED IN ITS EXISTENCE.] *Chrońmy Przyrode Ojczysta* 26(3): 13-16. May-June 1970. In Polish with English summ. *WR 145: 42*

Lent, Peter C. MUSKOX *(OVIBOS MOSCHATUS)* MANAGEMENT CONTROVERSIES IN NORTH AMERICA. *Biol. Conserv.* 3(4): 255-263, illus. 1971. [From Biol. Abstr. 53 (2), 1972.] *WR 145: 42*
[Univ. Alaska, College.] Discussion of controversy aroused by proposals to permit limited sport-hunting of muskoxen in Canada and Alaska.

Leuthold, Walter. A NOTE ON THE FORMATION OF FOOD HABITS IN YOUNG ANTELOPES. *East African Wildl. J.* 9. p. 154-156. Aug. 1971. *WR 145: 42*
[Tsavo Res. Project, P.O. Box 14, Voi, Kenya.] *"Litocranius walleri* and *Tragelaphus imberbis."*

Leuthold, Walter. OBSERVATIONS ON THE MOTHER-YOUNG RELATIONSHIP IN SOME ANTELOPES. *East African Wildl. J.* 9. p. 152-154. Aug. 1971. *WR 145: 42*
[Tsavo Res. Project, P.O. Box 14, Voi, Kenya.] *"Litocranius walleri* and *Tragelaphus imberbis."*

Leuthold, Walter. STUDIES ON THE FOOD HABITS OF LESSER KUDU IN TSAVO NATIONAL PARK, KENYA. *East African Wildl. J.* p. 35-45 + 2 pls. Aug. 1971. *WR 145: 42*
[Tsavo Res. Project, P.O. Box 14, Voi, Kenya.] Food habits of the lesser kudu, *Tragelaphus imberbis*, were studied in the Tsavo Research Project for two years. Lesser kudu feed on a wide variety of plants, utilizing all layers of the vegetation that they can reach, at least to some extent. A total of 105 plant species have so far been recorded as being eaten by lesser kudu. With regard to food only, the vegetation changes in Tsavo National Park do not appear to have had any adverse effects on the population of lesser kudu. However, the amount of suitably structured habitat has been substantially reduced in recent years. If present trends continue, it may decrease further, to the point of jeopardizing the future of lesser kudu in large parts of Tsavo National Park.--From summ.

McGlinchy, Sara E., Ruth Ann Monson, and Peter Nash, compilers. AN ANNOTATED BIBLIOGRAPHY OF THE WILD SHEEP OF NORTH AMERICA. *Rachelwood Wildl. Res. Preserve Publ.* no. 1. 86 p. 1971. *WR 145: 42*

McNeill, Gary R. (Sam). ELK MANAGEMENT IN THE CLEARWATER REGION. *Idaho Wildl. Rev.* 24(4): 3-6, illus. Jan.-Feb. 1972. *WR 145: 42*
[Regional Game Manager, Lewiston, Idaho.] Although elk populations within the Clearwater drainage are reduced in numbers, there is a surplus available to hunters that is not being harvested. Game managers believe that the elk numbers are decreasing solely because of restricted and deteriorating winter ranges.

Miller, Frank L., Eric Broughton, and Ellis M. Land. MOOSE FATALITY RESULTING FROM OVEREXTENSION OF RANGE. *J. Wildl. Dis.* 8(1): 95-98, 1 fig. Jan. 1972. *WR 145: 42*
[Canadian Wildl. Serv., 2721 Highway 31, Ottawa, Ontario, Canada.] Abstract: A 2-year-old male moose *(Alces alces)* attempted to winter 500 km north of the tree line, outside of moose range, and died as a result. The dead moose was found in May near the Kazan River at 63°53'N, 95°36'W, Northwest Territories. Analysis of the marrow from the right legs yielded lipid values ranging from 1.12-16.9%. Sedges *(Carex* sp.) and willow *(Salix* sp.) were the only components of the rumen contents. Comparison of weather data and the use of wind chill factors and basal metabolic rate demonstrate the physiological improbability of a moose surviving the winter on the open tundra.

Mochi, Ugo, and T. Donald Carter. HOOFED MAMMALS OF THE WORLD. *Charles Scribner's Sons* (New York). xx + 268 p., illus., 6 x 9.5 in. 1971. Price $9.95. *WR 145: 43*

In this unusually-illustrated natural history 300 species and subspecies are portrayed to scale as silhouettes by Ugo Mochi. The descriptions by T. Donald Carter complement the illustrations to make this book interesting and informative for both the layman and the scientist.

Podobiński, Leon. TATRZAŃSKI PARK NARODOWY / SPRAWOZDANIE Z AKCJI: "LICZENIE KOZIC" PRZEPROWADZONEJ W DNIACH OD 23 DO 26 PAŹDZIERNIKA 1967 R. [THE TATRA NATIONAL PARK: A REPORT ON THE CHAMOIS CENSUS CARRIED OUT FROM 23rd TO 26th OCTOBER 1967.] *Chrońmy Przyrodę Ojczystą* 24(4): 40-41. July-Aug. 1968. In Polish. *WR 145: 43*

Podobiński, Leon. SPRAWOZDANIE Z AKCJI "LICZENIA KOZIC" PRZEPROWADZONEJ W ROKU 1969. [REPORT ON THE CHAMOIS CENSUS IN 1969.] *Chrońmy Przyrodę Ojczystą* 26(5): 48-49. Sept.-Oct. 1970. In Polish. *WR 145: 43*

Presidente, Paul J. A., David E. Worley, and Jack E. Catlin. CROSS-TRANSMISSION EXPERIMENTS WITH *DICTYOCAULUS VIVIPARUS* ISOLATES FROM ROCKY MOUNTAIN ELK AND CATTLE. *J. Wildl. Dis.* 8(1): 57-62, 2 figs. Jan. 1972. *WR 145: 43*

[Oreg. State Univ., Corvallis.]

Ramsey, Charles W., and Melvin J. Anderegg. FOOD HABITS OF AN AOUDAD SHEEP, *AMMOTRAGUS LERVIA* (BOVIDAE), IN THE EDWARDS PLATEAU OF TEXAS. *Southwest. Natur.* 16(3&4): 267-280, 6 figs. 18 Feb. 1972. *WR 145: 43*

[Tex. A&M Univ., College Station.] Abstract: Observations on selection of food items by a tame aoudad *(Ammotragus lervia)* while feeding in three habitat conditions were recorded. Forbs as a category ranked first in order of preference, grass second, and browse third although individual plant species would deviate from this generalization. Food consumption in the exclosure reflected forage preferences as influenced by habitat potential since this pasture represented an above average habitat condition. Forage consumption in the other two pastures reflected preference as influenced by availability controlled by animal use.

Retief, G. P. THE POTENTIAL OF GAME DOMESTICATION IN AFRICA, WITH SPECIAL REFERENCE TO BOTSWANA. *J. South African Vet. Med. Ass.* 42(2): 119-127. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 43*

[Vet. Res. Inst., Onderstepoort, South Africa.] *"Taurotragus oryx."*

Richardson, Arthur H. THE ROCKY MOUNTAIN GOAT IN THE BLACK HILLS. *S. Dak. Dep. Game, Fish & Parks Bull.* no. 2. 24 p. + 2 figs. 1971. *WR 145: 43*

Summarization of all information currently available on the mountain goat, *Oreamnos americanus missoulae*, in the Black Hills.

Rijcken, P. H. Pels. SCHILSCHADE VAN EDELHERTEN AAN DE GROVEDEN. [DEBARKING OF SCOTCH PINE BY RED DEER.] *Nederlands Bosbouw Tijdschrift* 37(2): 30-65, illus. 1965. In Dutch with German and English summ. *WR 145: 43*

Robinette, W. L., and A. L. Archer. NOTES ON AGEING CRITERIA AND REPRODUCTION OF THOMSON'S GAZELLE. *East African Wildl. J.* 9. p. 83-98, 7 figs. + 1 pl. Aug. 1971. *WR 145: 43*

[Wildl. Res. Center, Denver, Colo.] Summary: Data collected from 265 cropped Thomson's gazelle *(Gazella thomsonii)* in northern Tanzania have permitted development of ageing criteria based on weights, horn growth and dentition. Most deciduous teeth are replaced between 12 and 15 months of age and the third molar becomes fully functional at nearly 2 y. Asymptotic horn length of about 32 cm is reached by males at 20-24 months. Dressed carcass weights were about 60 per cent of live weights, being slightly higher in males and higher in January than February. Females are capable of breeding before 1 y. Only single foetuses were found and these only in the right uterine horn. There was evidence of lambing every month but with May and November peaks.

Scotter, George. RANGE RESOURCES AND BIG GAME MANAGEMENT. *Western Fish Game* 6(1): 20-23, illus. Jan. 1971. *WR 145: 44*
[Canadian Wildl. Serv., Edmonton, Alberta, Canada.]

Smith, Ron. AN ACCURATE AGING METHOD FOR ELK. *Ariz. Game & Fish Dep., Wildl. Digest* abstr. 5. 4 p., illus. Nov. 1970. *WR 145: 44*
[Ariz. Fish & Game Dep.] A technique utilizing counts of annuli in the cementum layer of the teeth which was developed to determine age of white-tailed and mule deer has also been effectively used for aging elk.

Stewart, D. R. M. FOOD PREFERENCES OF *PRONOLAGUS*. *East African Wildl. J.* 9. p. 163. Aug. 1971. *WR 145: 44*
[2 Kychil Lane, Colehill, Wimborne, Dorset, England.] *"Pronolagus crassicaudatus."*

Stocker, G. C. THE EFFECTS OF WATER BUFFALOES ON PAPERBARK FORESTS IN THE NORTHERN TERRITORY. *Australian Forest Res.* 5(1): 29-34, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 44*
[For. Res. Inst., Darwin, Northern Territory, Australia.] The effects of the introduced Asiatic water buffalo *(Bubalus bubalis)* on some of the paperbark *(Melaleuca* species) forests in the Northern Territory are described. Overgrazing and trampling have damaged many areas and severely affected their potential productivity for timber, grazing or wildlife.

Stonehouse, Bernard. THERMOREGULATORY FUNCTION OF GROWING ANTLERS. *Nature* 218(5144): 870-872. 1 June 1968. *WR 145: 44*
[Yale Univ., New Haven, Conn.]

Telfer, Edmund. ASSOCIATION MEASURES APPLIED TO MOOSE AND WHITE-TAILED DEER DISTRIBUTIONS. *J. Mammal.* 53(1): 196-197. Feb. 1972. *WR 145: 44*
[Canadian Wildl. Serv., Edmonton, Alberta, Canada.] *"Alces alces* and *Odocoileus virginianus."*

Trout, Lester C., and Thomas A. Leege. ARE THE NORTHERN IDAHO ELK HERDS DOOMED? *Idaho Wildl. Rev.* 24(3): 3-9, illus. Nov.-Dec. 1971. *WR 145: 44*
In northern Idaho where modern firefighting has stopped wildfires, elk range has been overtaken by conifer forests. Browse has been shaded out, grown out of elk's reach, and died of old age. The Idaho Fish and Game Department and the U.S. Forest Service are burning off large acreages of winter range to increase their value to elk. Since prescribed burning is not permitted within wilderness areas the U.S. Forest Service may allow lightening-caused fires to burn in the future to maintain a diversified plant community.

Walters, C. J., and P. J. Bandy. PERIODIC HARVEST AS A METHOD OF INCREASING BIG GAME YIELDS. *J. Wildl. Mgmt.* 36(1): 128-134, 3 figs. Jan. 1972. *WR 145: 44*
[Univ. British Columbia, Vancouver, British Columbia, Canada.] Abstract: Using theoretical arguments and a computer simulation model, we have concluded that increased yields may be obtained from some big game populations by harvesting only once every several years. Since productivity per female increases with age in most big game populations, and since hunting shifts the age distribution towards younger animals, annual harvest may result in lowered mean productivity. Periodic harvest may help prevent changes in productivity. Computer simulation suggests that yield may be increased by 10 to 20 percent by periodic harvest and that the best interval between harvests is usually 2-4 years.

Walters, Carl J., and Jack E. Gross. DEVELOPMENT OF BIG GAME MANAGEMENT PLANS THROUGH SIMULATION MODELING. *J. Wildl. Mgmt.* 36(1): 119-128, 9 figs. Jan. 1972. *WR 145: 44*
[Univ. British Columbia, Vancouver, British Columbia, Canada.] Abstract: Current and future demands on wildlife resources require greater levels of stewardship from the wildlife manager. More complex demands and inevitable compromises will require more sophisticated management plans whose attributes

are alternative paths of action and estimates of the consequences. The core of needed management plans is visualized as question banks and data-processing models. Simulation models permit premanagement experimentation in terms of *what if* games. Examples of what if games are discussed to illustrate critical population conditions, sensitive management parameters, alternative objectives, consequences of environmental catastrophes, and procedures for developing objective measures for management performance. This paper attempts to show how information generated from a complex of variables can be channeled into the decision-making process.

Xanten, William A., Jr. GESTATION PERIOD IN THE BONGO *(BOOCERCUS EURYCERCUS)*. *J. Mammal.* 53(1): 232. Feb. 1972. *WR 145: 45*
[Nat. Zool. Park, Washington, D.C.] A gestation period of 294 to 296 days.

DEER (Odocoileus)

Bergstrom, Andrea S., John R. Palmateer, and Stuart L. Free. INCIDENCE OF MAXILLARY CANINE TEETH IN WHITE-TAILED DEER FROM NEW YORK. *N.Y. Fish & Game J.* 18(1): 66-67, 1 fig. Jan. 1971. *WR 145: 45*
[N.Y. State Dep. Environ. Conserv., Albany.]

Boeker, Erwin L., Virgil E. Scott, Hudson G. Reynolds, and Byron A. Donaldson. SEASONAL FOOD HABITS OF MULE DEER IN SOUTHWESTERN NEW MEXICO. *J. Wildl. Mgmt.* 36(1): 56-63, 3 figs. Jan. 1972. *WR 145: 45*
[Denver Wildl. Res. Center, Field Sta. HQ, Tempe, Ariz.] Abstract: Rumen contents from 77 mule deer *(Odocoileus hamionus)* taken at seasonal intervals on the Fort Bayard Administrative Site, New Mexico, during the period 1964-69 were analyzed by point-frame sampling. Woody browse made up approximately 75 percent of the total diet, forbs 16 percent, and grasses 2.2 percent. The most important species, comprising 56 percent, were oaks *(Quercus grisea, Q. undulata,* and *Q. emoryi)* and birchleaf mountainmahogany *(Cercocarpus breviflorus)*. For the major shrub species, a significant linear relationship ($r=0.90$) existed between the percent density composition and percent volume in rumen contents for fall and winter, when browse comprised nearly 90 percent of the diet. Forbs were important diet items when available. Nutritional analyses of major forage species revealed adequate protein levels during all seasons. Calcium-phosphorus ratios were slightly higher than desirable in fall and winter, but they produced no visible, detrimental effects on the deer population. Digestibility was highest in spring and fall after periods of greatest precipitation. Generally, food supplies and nutritional quality appear adequate for maintaining mule deer on the Fort Bayard area.

Clark, Keith A., R. M. Robinson, L. L. Weishuhn, and Stewart McConnell. FURTHER OBSERVATIONS ON MALIGNANT CATARRHAL FEVER IN TEXAS DEER. *J. Wildl. Dis.* 8(1): 72-74, 3 figs. Jan. 1972. *WR 145: 45*
[Tex. A&M Univ., College Station.] Abstract: The original description of MCF in Texas deer was based on the occurrence of clinical signs and characteristic pathologic lesions. Since that time, continued observations have demonstrated the sporadic occurrence, irregular transmission, and the causative organism's apparent susceptibility to freezing which is typical of MCF. These findings lend strong supportive evidence to the diagnosis of MCF as a continuing infection in this herd.

Drake, Bill. WINTER FEEDING BY AIR / HOW GOOD IS IT? *Pa. Game News* 43(3): 28-31, illus. Mar. 1972. *WR 145: 45*
"Aerial distribution of ear corn is considered a poor technique for supplemental winter feeding of deer."

Gilbert, Fred F. DEER SEASON 1970. *Maine Dep. Inland Fisheries & Game, Game Div. Leafl. Ser.* 2(16). 20 p., 3 figs. Sept. 1971. *WR 145: 46*
[Univ. Maine, Orono.] Tabulations of total deer kill, deer kill per square mile, and registered deer kill by hunting zone, biological zone and county are supplemented with tables reflecting the composition of the hunters and the sex and age composition of the legal deer kill in Vermont during the 1970 season.

Halls, Lovell K., chairman. WHITE-TAILED DEER IN THE SOUTHERN FOREST HABITAT / PROCEEDINGS OF A SYMPOSIUM AT NACOGDOCHES, TEXAS / MARCH 25-26, 1969. *Southern Forest Exp. Sta., Southeastern Sect. Wildl. Soc.*, and *Stephen F. Austin State Univ.* ii + 130 p. 1969. *WR 145: 46*
[Southern Forest Exp. Sta., Nacogdoches, Tex.] Contents: *History of deer and their habitat in the South*, John D. Newsom; *Population dynamics of white-tailed deer*, Walter V. Robertson; *Foods and feeding habits of white-tailed deer*, Daniel W. Lay; *Physiology and nutrition of deer in southern upland forests*, Henry L. Short; *Seasonal changes in movements of white-tailed deer*, Robert L. Downing, Burd S. McGinnes, Ralph L. Petcher, and Joshua L. Sandt; *Deer predation in North Carolina and other southeastern states*, Frank B. Barick; *Some considerations for diseases and parasites of white-tailed deer in the southeastern United States*, Frank A. Hayes and Annie K. Prestwood; *Critical factors in habitat appraisal*, William D. Zeedyk; *Deer habitat quality of major forest types in the South*, J. J. Stransky; *Agricultural clearings as sources of supplemental food and habitat diversity for white-tailed deer*, Joseph S. Larson; *Philosophy of deerherd management*, Jack A. Crockford; *Hunting methods, limits, and regulations*, Dean A. Murphy; *Managed hunts by state agencies*, A. Gordon Spratt; *Effects of timber harvest and regeneration on deerfood and cover*, V. E. Carter and S. A. Dow; *How size and distribution of cutting units affect food and cover of deer*, Burd S. McGinnes; *Short and long rotations in relation to deer management in southern forests*, Phil D. Goodrum; *Timber stand density influences food and cover*, Robert M. Blair; *Effects of hardwood control on food and cover*, E. B. Chamberlain, Jr.; *The effects of prescribed burning on deerfood and cover*, Paul A. Shrauder and Howard A. Miller; *The goals of the southern National forests in white-tailed deer management*, Donald D. Strode and Wayne J. Cloward; *The goals of state conservation agencies in deerherd management*, Frank P. Nelson; *The goals of private forest holdings in deer management*, Raymond D. Moody; *Prevention and control of damage to trees*, D. C. Denton, E. H. Hodil, and D. H. Arner; *Measuring habitat productivity*, Richard P. Harlow and James D. Whelan; *Evaluating food use--new methods and techniques*, H. S. Crawford; *Problems in censusing the white-tailed deer*, James H. Jenkins and R. Larry Marchinton; *The use of models in resource management*, Don W. Hayne; *Sociological and economic considerations in management of white-tailed deer*, E. L. Cheatum, Lonnie L. Williamson, and A. Sydney Johnson; and *Regulatory legislation and public attitude on white-tailed deer management*, Leslie L. Glasgow.

Hesselton, William T., and Lawrence Jackson. SOME REPRODUCTIVE ANOMALIES IN FEMALE WHITE-TAILED DEER FROM NEW YORK. *N.Y. Fish & Game J.* 18(1): 42-51, 5 figs. Jan. 1971. [Also listed in *WR 144: 72* from Trans. NE Sect. Wildl. Soc., 28th NE Fish & Wildl. Conf.] *WR 145: 46*
[N.Y. Dep. Environ. Conserv., Albany.] Abstract: A total of 2,069 pregnant white-tailed deer and 3,575 associated embryos were examined. Ten instances of polyovulation were noted. Intrauterine migration of fertilized ova had occurred in 48 per cent of the specimens for which the necessary data were complete. Five instances involving twin embryos in one uterine horn and none in the other were noted. Dermoid ovarian cysts were noted in seven instances. Data on the incidence of dead embryos *in utero*, mummification and embryo emaciation were recorded. No evidence of abortion was found. Data on size differences among twin embryos of opposite sex indicated that males grew more rapidly than females and that, at term, males were longer than females in 65 per cent of the cases. Data for multiple embryos in the same uterus showed a size differential of 10 per cent or more in 7.5 per cent of such groups.

Kellogg, Forest E., Theodore P. Kistner, Robert K. Strickland, and Robert R. Gerrish. ARTHROPOD PARASITES COLLECTED FROM WHITE-TAILED DEER. *J. Med. Entomol.* 8(5): 495-498. 15 Dec. 1971. *WR 145: 47*
[Univ. Ga., Athens.] 5864 white-tailed deer *(Odocoileus virginianus)* from the United States, the U.S. Virgin Islands and Cuba were examined for ectoparasites. Most of the collections were made in the southeastern United States. Twenty-five species of arthropods were found.--From abstr.

Kuttler, K. L., O. H. Graham, S. R. Johnson, and J. L. Trevino. UNSUCCESSFUL ATTEMPTS TO ESTABLISH CATTLE *BABESIA* INFECTIONS IN WHITE-TAILED DEER. *J. Wildl. Dis.* 8(1): 63-66. Jan. 1972. *WR 145: 47*
[Tex. A&M Univ., College Station.]

Lockard, Gordon R. FURTHER STUDIES OF DENTAL ANNULI FOR AGING WHITE-TAILED DEER. *J. Wildl. Mgmt.* 36(1): 46-55, 4 figs. Jan. 1972. *WR 145: 47*
[Univ. Oreg., Eugene.] Abstract: Teeth of white-tailed deer *(Odocoileus virginianus)* from 15 states and one Canadian province were examined for annual growth rings in the incisor root cement and the molar cement pads. Teeth from 46 animals of known ages, from 11 of minimum known ages, and from 320 whose ages were estimated by eruption and wear were inspected. Annual growth rings did not consistently appear in the cement pads of 154 molars nor in the cement of stained ground sections of incisors. When a histological technique was used, annual growth rings consistently appeared in the cement of incisor roots. Split annuli were found in 39 percent of the known-age females and 28 percent of the known-age males examined, demonstrating that such annuli are not *rut lines* caused by dietary or hormonal changes during breeding. A 26 percent error was discovered in ages estimated by eruption and wear, with a tendency toward overaging (16 percent).

McKean, William T., and Richard W. Bartmann. DEER-LIVESTOCK RELATIONS ON A PIÑON-JUNIPER RANGE IN NORTHWESTERN COLORADO. *Colo. Dep. Game, Fish & Parks.* xiv + 132 p., 24 figs. July 1971. *WR 145: 47*
Discussion of the nature and extent of competition on a piñon-juniper range between cattle, sheep, and mule deer, *Odocoileus hemionus*, in fenced enclosures under varying grazing intensities during the field seasons 1952-1965. Vegetative and animal responses measured between 1952 and 1968 are also discussed.--From abstr.

Miller, Frank L. MUTUAL GROOMING BY BLACK-TAILED DEER IN NORTHWESTERN OREGON. *Canadian Field Natur.* 85(4): 295-301. Oct.-Dec. 1971. *WR 145: 47*
[Oreg. State Game Comm., Corvallis.] Pairs of black-tailed deer *(Odocoileus hemionus columbianus)* on the Cedar Creek study area in northwestern Oregon were observed while occupied in mutual groomings on 28 occasions. The grooming pairs varied by sex and age and were composed of 17 different deer. The study herd was classified as to sex and age in years 3^{+}, 2, 1, and fawns. All age classes and both sexes were observed in simultaneous mutual groomings. It was suggested that the act of mutual grooming reinforces the social bonds between members of closed groups of deer.--From abstr.

Nixon, Charles M. PRODUCTIVITY OF WHITE-TAILED DEER IN OHIO. *Ohio J. Sci.* 71(4): 217-225, illus. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 47*
[Ill. Natur. Hist. Surv., Urbana, Ill.] *"Odocoileus virginianus."*

Richards, Stephen H. EPIZOOTIC HEMORRHAGIC DISEASE OF DEER / A COMPARISON OF THE 1962 AND 1970 OUTBREAKS THAT OCCURRED IN WESTERN NORTH DAKOTA. *N. Dak. Outdoors* 34(8): 2-4, illus. Feb. 1972. *WR 145: 47*

Segelquist, C. A., H. L. Short, F. D. Ward, and R. G. Leonard. QUALITY OF SOME WINTER DEER FORAGES IN THE ARKANSAS OZARKS. *J. Wildl. Mgmt.* 36(1): 174-177. Jan. 1972. *WR 145: 47*
[Southern Forest Exp. Sta., Nacogdoches, Tex.] Abstract: Green herbage comprised most of the stomach contents of 10 white-tailed deer *(Odocoileus virginianus)* killed in two Arkansas Ozark enclosures in March 1967. Analyses of

freshly gathered forages showed that herbage was more digestible and contained more protein than browse. Acorns formed a relatively small portion of the total food ingested, because the mast crop was small the preceding fall.

Thomas, Jack Ward, R. M. Robinson, and R. G. Marburger. STUDIES IN HYPOGONADISM IN WHITE-TAILED DEER OF THE CENTRAL MINERAL REGION IN TEXAS. *Tex. Parks & Wildl. Dep., Tech. Ser.* no. 5. vi + 50 p., 32 figs. 1970. *WR 145: 48*
"Odocoileus virginianus."

MAMMALS--MARINE

Briggs, Kenneth T., and C. William Davis. A STUDY OF PREDATION BY SEA LIONS ON SALMON IN MONTEREY BAY. *Calif. Fish & Game* 58(1): 37-43, 1 fig. Jan. 1972. *WR 145: 48*
[Moss Landing Marine Labs., Moss Landing, Calif.] Abstract: There have been no studies which could serve to demonstrate the extent of sea lion predation on salmon *(Oncorhynchus* sp.*)* in Monterey Bay, California. Observations of fishing operations in Monterey Bay during the 1969 commercial salmon season showed that California sea lions *(Zalophus californianus* Lesson*)* preyed upon about 4% of all salmon hooked from the boats sampled. In addition, California sea lions were also seen holding seven salmon which they had not taken from fishermen's lines. Sea lions were seen more frequently in the southern half of Monterey Bay in the early season and were concentrated in the northern half in August and September.

Delyamure, S. L. HELMINTHOFAUNA OF MARINE MAMMALS. (ECOLOGY AND PHYLOGENY). *Published for the U.S. Department of the Interior and the National Science Foundation, Washington, D.C., by the Israel Program for Scientific Translations* (Jerusalem). TT 67-51202. ix + 522 p., 240 figs. 1968. Russian original by the Academy of Sciences of the USSR in 1955. [Translation available from the U.S. Dep. Commerce, Clearinghouse for Federal Scientific and Technical Information, Springfield, Va.] *WR 145: 48*

Gambell, Ray, and Sidney G. Brown. STATUS AND CONSERVATION OF THE GREAT WHALES. *IUCN Publ., New Ser.* 2(21): 185-189. Oct.-Dec. 1971. *WR 145: 48*
[Whale Res. Unit, Nat. Inst. Oceanography, London, England.] A brief outline of the history of whaling, methods of scientific research on the large whales with the latest analyses of their numbers, and the regulation of the industry and prospects for the resource.

Greer, Charles, and Victor B. Scheffer. A 1715 PICTURE OF A FUR SEAL. *Pacific Northwest Quart.* 62(4): 151-153, 1 fig. Oct. 1971. *WR 145: 48*
[Univ. Wash., Pullman.] Includes a translation of a Japanese text by Terajima in which the physiology, habits and range of the fur seal in 1715 are described.

Hamlin, Robert L., Sam H. Ridgway, and W. G. Gilmartin. ELECTROCARDIOGRAM OF PINNIPEDS. *Amer. J. Vet. Res.* 33(4): 867-875, 10 figs. Apr. 1972. *WR 145: 48*
[Ohio State Univ., Columbus.] *"Mirounga angustirostris, Phoca vitulina,* and *Zalophus californianus."*

Leboeuf, Burney J. SEXUAL BEHAVIOR IN THE NORTHERN ELEPHANT SEAL *MIROUNGA ANGUSTIROSTRIS*. *Behaviour* 41(1-2): 1-26, 12 figs. 1972. In English with French summ. *WR 145: 48*
[Univ. Calif., Santa Cruz.] Detailed report based on studies made during 1968-70 at Año Nuevo Island, 19 miles north of Santa Cruz, California.

Ling, J. K. THE SKIN AND HAIR OF THE SOUTHERN ELEPHANT SEAL, *MIROUNGA LEONINA* (L.). III. MORPHOLOGY OF THE ADULT INTEGUMENT. *Australian J. Zool.* 16: 629-645. 1968. *WR 145: 48*
[Massey Univ., Palmerston North, New Zealand.]

Nishimura, Saburo. RECENT RECORDS OF BAIRD'S BEAKED WHALE IN THE JAPAN SEA. *Publ. Seto Mar. Biol. Lab.* 18(1): 61-68. 1970. [From Biol. Abstr. 53(1), 1972.] *WR 145: 49*

[Seto Mar. Biol. Lab., Sirahama, Wakayama-ken, Japan.] Two records are given for *Berardius bairdi* from the west coast of Honshu.

Ridgway, Sam H., editor. MAMMALS OF THE SEA / BIOLOGY AND MEDICINE. *Charles C. Thomas* (Springfield, Ill.). xiii + 812 p., illus., 7 x 10 in. 1971. Price $45.00. *WR 145: 49*

"Written as a guide to marine mammals with special emphasis on their care and maintenance in the research laboratory or oceanarium, this book will serve as a valuable reference for veterinarians, researchers, curators and aquarists. Zoologists, anatomists, behaviorists, marine biologists and graduate students in these and related fields will find it the most authoritative text yet published on this group of mammals." Each of the chapters was contributed by recognized experts: *General biology*, Masaharu Nishivaki; *The sea otter*, Karl W. Kenyon; *The central nervous system*, Norbert J. Flanigan; *Observations on the anatomy of some cetaceans and pinnipeds*, Robert F. Green; *Comparative microscopic anatomy of selected marine mammals*, John G. Simpson and Murray B. Gardner; *Behavior of marine mammals*, Melba C. Caldwell and David K. Caldwell; *Senses and communication*, David K. Caldwell and Melba C. Caldwell; *Evolution and cytogenetics*, Deborah Duffield Kulu; *A checklist of marine mammal parasites*, Murray D. Dailey and Robert L. Brownell, Jr.; and *Homeostasis in the aquatic environment*, Sam H. Ridgway.

Ridgway, Sam H., and Murray D. Dailey. CEREBRAL AND CEREBELLAR INVOLVEMENT OF TREMATODE PARASITES IN DOLPHINS AND THEIR POSSIBLE ROLE IN STRANDING. *J. Wildl. Dis.* 8(1): 33-43, 6 figs. Jan. 1972. *WR 145: 49*

[Naval Undersea Center, San Diego, Calif.] *"Delphinus* sp."

Stirling, Ian. REGULATION OF NUMBERS OF AN APPARENTLY ISOLATED POPULATION OF WEDDELL SEALS *(LEPTONYCHOTES WEDDELLI)*. *J. Mammal.* 53(1): 107-115, 1 fig. Feb. 1972. *WR 145: 49*

[Canadian Wildl. Serv., 2721 Highway 31, Ottawa, Ontario, Canada.] Abstract: A population of Weddell seals *(Leptonychotes weddelli)* at White Island on the McMurdo Ice Shelf, Antarctica, appears to be geographically isolated. Its origin is still uncertain but three explanatory theories are mentioned. The breeding and nonbreeding fractions of the population separate during the pupping season (October to mid-December) and mix later as do their counterparts in eastern McMurdo Sound. Despite a greater reproductive potential, only two or three pups have been born annually for the past five summers. Natality clearly exceeds mortality of adults and subadults, but known survival of pups is of the same order as known mortality of adults and subadults. Censuses of seals visible on the sea ice in 1961 and 1968 were identical (11 seals), which also indicate stability in numbers of the population. The extreme fatness of all seals at White Island suggests that availability of food does not regulate numbers. Probably the availability of breathing holes in winter does. Intrasexual social strife between females also appears to lower the reproductive rate below its theoretical potential.

Stirling, Ian, and Roger L. Gentry. AN ELIMINATION POSTURE IN THE PINNIPEDIA. *J. Mammal.* 53(1): 191-192, 1 fig. Feb. 1972. *WR 145: 49*

[Canadian Wildl. Serv., 2721 Highway 31, Ottawa, Ontario, Canada.] *"Arctocephalus forsteri* and *Eumatopias jubatus."*

Sumner-Smith, G., P. W. Pennock, and K. Ronald. THE HARP SEAL, *PAGOPHILUS GROENLANDICUS*, (ERXLEBEN, 1777): XVI EPIPHYSEAL FUSION. *J. Wildl. Dis.* 8(1): 29-32, 4 figs. Jan. 1972. *WR 145: 49*

[Univ. Guelph, Guelph, Ontario, Canada.] Abstract: The epiphyseal fusion of the manus and the fusion of the pelvic bones during the first year of life of four harp seal pups are reported and compared with the bones of two older animals of 2.5 years and 24 years of age. In the period under observation in the pups the only physes to fuse were those of the third phalanx and the pelvis.

Albignac, R. NOTES ETHOLOGIQUES SUR QUELQUES CARNIVORES MALGACHES: LE *MUNGOTICTIS LINEATA* POCOCK. [ETHOLOGICAL NOTES ON SOME MADAGASCAR CARNIVORES: *MUNGOTICTIS LINEATA* POCOCK.] *Terre & Vie* 118(3): 328-343, 6 figs. July-Sept. 1971. In French with English summ. *WR 145: 50*

Mungotictis lineata occupies, with *Galidia elegans*, a similar ecological niche in Madagascar to the mongooses in Africa and Asia; the species even uses the same technique as mongooses for breaking-open eggs.--From summ.

Bailey, P. T. THE RED KANGAROO, *MEGALEIA RUFA* (DESMAREST), IN NORTH-WESTERN NEW SOUTH WALES. I. MOVEMENTS. *CSIRO Wildl. Res.* 16(1): 11-28, 12 figs. Nov. 1971. *WR 145: 50*

[Univ. New South Wales, Kensington, Australia.] Indices of density of red kangaroo populations were obtained from extensive aerial censuses and more intensive ground counts on six habitats which differed mainly in the species composition of their pasture. No differences in density of kangaroos were detected between habitats except that a flood plain, although occupying only a small area, was extremely attractive to kangaroos at certain times because it was much greener than the other habitats. The greatest densities of kangaroos were associated with green pasture when it was available, but in dry times the greatest density was associated with long dry grass.--From abstr.

Bailey, P. T., P. N. Martensz, and R. Barker. THE RED KANGAROO, *MEGALEIA RUFA* (DESMAREST), IN NORTH-WESTERN NEW SOUTH WALES. II. FOOD. *CSIRO Wildl. Res.* 16 (1): 29-39, 4 figs. Nov. 1971. *WR 145: 50*

[Univ. New South Wales, Kensington, Australia.] A study of food available to and eaten by kangaroos on a sandhill habitat at Tero Creek Station in a semi-arid part of north-western New South Wales was made between June 1964 and February 1966. At the beginning of this period green food was abundant but 1965 was a year of extreme drought, when the quantity and variety of food available to kangaroos declined. Grasses and chenopods were the main food items throughout the year. Palatable grasses, mainly *Eragrostis* spp. and *Enneapogon avenaceus*, were selected when they were available, but as the drought progressed and these grasses became rare, chenopods (principally *Bassia diacantha*) were selected instead of other grass and non-grass species. When grasses were eaten stems were taken in addition to leaves, but in dicotyledons the woody stems were avoided in favor of leaves and fruit.--From abstr.

Bamford, John, and John Martin. A METHOD FOR PREDICTING SUCCESS OF AERIAL POISON CAMPAIGNS AGAINST OPOSSUMS. *New Zealand J. Sci.* 14(2): 313-321, illus. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 50*

[Univ. Canterbury, Canterbury, New Zealand.] A condition index derived from total weight and total length of opossums is tested for association with per cent kill achieved by 9 aerial poison operations in Westland. A close correlation is found between the index and per cent kill using manufactured pellets as bait. Methods of predicting the per cent kill, based solely on weights and lengths of opossums, are derived from operations in Westland protection forests using pellets impregnated with 1080 poison.

Bartholomai, Alan. MORPHOLOGY AND VARIATION OF THE CHEEK TEETH IN *MACROPUS GIGANTEUS* SHAW AND *MACROPUS AGILIS* (GOULD). *Mem. Queensland Mus.* 16(1): 1-18, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 50*

[Queensland Mus., Brisbane, Queensland, Australia.]

Elder, William H., and Don H. Rodgers. AGE AND GROWTH OF ELEPHANTS / A STUDY IN THE LUANGWA VALLEY, 1965-1967. *African Wild Life* 22: 281-293, 9 figs. [1968.] *WR 145: 50*

[Mo. Coop. Wildl. Res. Unit, Columbia.]

Ewer, R. F. MOLTING CYCLE IN A TROPICAL CARNIVORE. *J. Mammal.* 53(1): 180-181, 1 fig. Feb. 1972. *WR 145: 50*

[Univ. Ghana, Legon, Accra, Ghana.] "Long-nosed mongoose *Crossarchus obscurus*."

Field, C. R. ELEPHANT ECOLOGY IN THE QUEEN ELIZABETH NATIONAL PARK, UGANDA. *East African Wildl. J.* 9. p. 99-123, 5 figs. Aug. 1971. *WR 145: 51*
[P.O. Box 30559, Nairobi, Kenya.]

Graham, A. D., and R. M. Laws. THE COLLECTION OF FOUND IVORY IN MURCHISON FALLS NATIONAL PARK, UGANDA. *East African Wildl. J.* 9. p. 57-65. Aug. 1971. *WR 145: 51*
[P.O. Box 30678, Nairobi, Kenya.] The circumstances surrounding the collection of ivory from dead elephants are described, with particular reference to Murchison Falls National Park. The characteristics of the interval between death and complete disintegration of an elephant are described. These, combined with observations of known age skeletons, comprised the criteria used in classifying skeletons found from the air into three relative age classes. Average annual mortality is estimated for the population north of the Nile (MFPN) at 147 animals yielding 1945 kg of ivory, and for that south of the Nile (MFPS) at 474 animals yielding 7497 kg ivory. Park-found ivory records are analyzed for the period 1959-69. The expected age distribution of deaths is compared with the observed. For MFPN a bias in favor of large (male) tusks is present, explicable by the concentration of ranger search effort in areas of known high male density. For MFPS a bias towards small tusks is thought to be caused by elephants wounded outside the park dying inside it. High losses to poachers are evident. Comparative costing suggests that ground searching is a more efficient method of finding ivory than aerial searching.—From summ.

Laws, R. M. THE TSAVO ELEPHANTS. *Oryx* 11(1): 32-34. May 1971. *WR 145: 51*
Review paper.

Petter, J. J., A. Schilling, and G. Pariente. OBSERVATIONS ECO-ETHOLOGIQUES SUR DEUX LEMURIENS MALGACHES NOCTURNES: *PHANER FURCIFER* ET *MICROCEBUS COQUERELI*. [ECO-ETHOLOGICAL OBSERVATIONS OF TWO NOCTURNAL LEMURS OF MADAGASCAR: *PHANER FURCIFER* AND *MICROCEBUS COQUERELI*.] *Terre & Vie* 118(3): 287-327, 18 figs. July-Sept. 1971. In French with English summ. *WR 145: 51*
[Mus. Nat. Hist. Natur., 91-Brunoy, France.]

Rasa, O. Anne E. ASPECTS OF SOCIAL ORGANIZATION IN CAPTIVE DWARF MONGOOSES. *J. Mammal.* 53(1): 181-185. Feb. 1972. *WR 145: 51*
[Max-Planck Inst. Verhaltensphysiol., Seewiesen, Germany.] *"Helogale undulata rufula."*

Saunders, James C., Chia-Shong Chen, and Peter A. Pridmore. SUCCESSIVE HABIT-REVERSAL LEARNING IN MONOTREME *TACHYGLOSSUS ACULEATUS* (ECHIDNA). *Anim. Behav.* 19(3): 552-555, 2 figs. Aug. 1971. *WR 145: 51*
[Monash Univ., Victoria, Australia.]

Thornton, D. D. THE EFFECT OF COMPLETE REMOVAL OF HIPPOPOTAMUS ON GRASSLAND IN THE QUEEN ELIZABETH NATIONAL PARK, UGANDA. *East African Wildl. J.* 9. p. 47-55, 1 fig. Aug. 1971. *WR 145: 51*
[P.O. Box 73, Dodoma, Tanzania.]

Van Deusen, Hobart M. *ZAGLOSSUS*, NEW GUINEA'S EGG-LAYING ANTEATER. *Fauna* no. 2. p. 12-19, illus. Mar.-Apr. 1971. *WR 145: 51*
[Amer. Mus. Natur. Hist., New York, N.Y.]

Western, David. GIRAFFE CHEWING A GRANT'S GAZELLE CARCASS. *East African Wildl. J.* 9. p. 156-157. Aug. 1971. *WR 145: 51*
[Univ. Nairobi, P.O. Box 30197, Nairobi, Kenya.] *"Giraffa camelopardalis rothschildi."*

Wodzicki, K., and J. E. C. Flux. THE PARMA WALLABY AND ITS FUTURE. *Oryx* 11 (1): 40-47, illus. May 1971. *WR 145: 51*
"The overall position of the parma wallaby [*Macropus parma*] on Kawau Island and in captivity seems reasonably hopeful, and certainly the species is far

safer than it was only five years ago. Three main developments now in hand should help to ensure security: a carefully managed reserve of at least 350 acres on Kawau; stabilised breeding colonies of 30-50 animals in a few leading zoos; and the establishment of breeding colonies on one or [more] offshore, predator-free Australian islands."

Wyatt, John R. OSTEOPHAGIA IN MASAI GIRAFFE. *East African Wildl. J.* 9. p. 157. Aug. 1971. *WR 145: 52*
[P.O. Queen Elizabeth Park, Lake Katwe, Uganda.] *"Giraffa camelopardalis tippelskirchi."*

BIRDS--GENERAL

Beretzk, Péter. MADÁRHÍREK SZEGED KÖRNYÉKÉRÓL. [ORNITHOLOGICAL OBSERVATIONS FROM THE AREA OF SZEGED.] *Allattani Koezl* 58(1-4): 164-165. 1971. [From Biol. Abstr. 53(2), 1972. In Hungarian with German summ.] *WR 145: 52*
[Szeged, Hungary.] In 1970 the following rare birds were observed near the city of Szeged or the neighboring reserve at Feherto: black woodpecker *(Dryocopus martius)*, roseate spoonbill *(Ajaija ajaja)*, black-eared wheatear *(Oenanthe hispanica)*, black redstart *(Phoenicurus ochruros)*, white pelican *(Pelecanus onocrotalus)*, wagtail *(Motacilla flava feldeggi)* and coot *(Fulica cristata)*.

Clark, Richard J. WING-LOADING--A PLEA FOR CONSISTENCY IN USAGE. *Auk* 88(4): 927-928. Oct. 1971. *WR 145: 52*
[Cornell Univ., Ithaca, N.Y.] The term "wing-loading" has been used to mean both wing area per unit of body weight and mean weight per unit of wing area. "As the term, by its name, suggests the load of weight placed on the wings it seems reasonable...that grams per square centimeter is to be preferred for reporting wing-loading."--Courtesy/ Paul A. Stewart.

Cracraft, Joel. THE RELATIONSHIPS AND EVOLUTION OF THE ROLLERS: FAMILIES CORACIIDAE, BRACHYPTERACIIDAE, AND LEPTOSOMATIDAE. *Auk* 88(4): 723-752, 14 figs. Oct. 1971. *WR 145: 52*
[Univ. Ill. Med. Center, Chicago.] Courtesy/ Paul A. Stewart.

Drycz, Andrzej, and Jerzy Okulewicz. Z ZAGADNIEŃ OCHRONY PTAKÓW NA POJEZIERZU ŁĘCZYŃSKO-WŁODAWSKIM. [SOME PROBLEMS OF BIRD PROTECTION IN THE ŁĘCZNA-WŁODAWA LAKE DISTRICT.] *Chrońmy Przyrodę Ojczystą* 27(1): 63-68, 3 figs. Jan.-Feb. 1971. In Polish. *WR 145: 52*

Golewska, Małgorzata, Jan Radziwiłł, and Teresa Poniatowska, translators. ACTA ORNITHOLOGICA, 9(1-6), 1965, 1966. *Published for Smithsonian Institution and the National Science Foundation, Washington, D.C., by the Scientific Publications Foreign Cooperation Center of the Central Institute for Scientific, Technical, and Economic Information, Warsaw, Poland.* TT 70-55116. 284 p. 1971. Polish original published by Zoological Institute, Warsaw, Poland. [Translation available from U.S. Dep. Commerce, National Technical Information Service, Springfield, Va.] *WR 145: 52*
The following papers are included in this issue: *Polish ornithological bibliography for 1945-1960*, L. Tomialojc; *On the distribution of penduline tit*, Remiz pendulinus *(L.) in Poland*, K. A. Dobrowolski and E. Nowak; *Birds of the Kórnik Arboretum*, S. Bartkowiak; *Some species of birds observed in the eastern part of Polish Carpathian Mountains in 1958-1964*, L. Cais; *Birds observed in the Krogulno Fish Breeding Estate*, K. Janowski; *Golden eagle*, Aquila chrysaëtos *(L.) in Masuria*, Z. Karczewski; *Birds observed in environments of Mszana Dolna, Beskid Wyspowy Piedmont*, P. Kozłowski; *A puffin*, Fratercula arctica *(L.) at the mouth of the Vistula*, K. Lambert and H. W. Nehls; *Bonelli's warbler*, Phylloscopus bonelli *(Vieill.) in Karkonosze Mountains*, L. Tomialojc; *Pectoral sandpiper*, Calidris melanotos *(Vieill.) in Poland*, J. Witkowski; *Birds of "Pond Nowokuźnicki Nature Reserve" in 1963-1964*, J. Witkowski; *Report on the activity of the Ornithological Station for 1964*, J. B. Szczepski; *Distribution of the breeding colonies of the rook*, Corvus frugilegus *L., in Poland*, A. Dyrcz; and *Operation Baltic 1960-1964. Bird ringing report*, P. Busse and M. Gromadzki.

Jarvis, M. J. F., and D. L. Cram. BIRD ISLAND, LAMBERTS BAY, SOUTH AFRICA: AN ATTEMPT AT CONSERVATION. *Biol. Conserv.* 3(4): 269-272, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 53*

[Univ. Cape Town, Cape Town, South Africa.] Conservation measures instituted resulted in increases in transient and resident birds and guano.

Maštrović, Antun, editor. LARUS / I / 1947. *Published for Smithsonian Institution and the National Science Foundation, Washington, D.C., by the Nolit Publishing House, Belgrade, Yugoslavia.* TT 70-56066. 128 p. 1971. Serbo-Croatian original published by Institute of Ornithology in 1947. [Translation available from U.S. Dep. Commerce, Clearinghouse for Federal Scientific and Technical Information, Springfield, Va.] *WR 145: 53*

The following papers are included in this issue: *Results of bird banding by the Ornithological Institute of Zagreb in the period 1940 to 1946, 4th report,* Antun Maštrović; *Determining the Balkan falcons, subgenus* Falco, Kiril Martino; *Some data on* Charadriidae *in FNR Yugoslavia,* Antun Maštrović; Muscicapa parva parva *Bechstein in Yugoslavia,* Dragutin Rucner; Carduelis flavirostris flavirostris *(L.) a new bird for the Yugoslav fauna,* Renata Kroneisl; *Some data on the geographical distribution of* Oenanthe hispanica *and* Hippolais pallida *in Serbia,* Sergije D. Matvejev; *A contribution to the distribution of the subspecies of* Luscinia svecica cyanecula *(Wolf) in Croatia,* Stjepan Ivković; *Ornithological material of Serbia (1838-1947),* Sergije D. Matvejev; *Data on the nutrition of some bird species of the orders* Columbae, Ralli *and* Galli, Josip Plančić; *Type species of* Phlogoenas platenae *Blas.,* Jelena Martino; and *Seed and fruit dissemination by birds* (Ornithochory), Josip Kovačević.

Maštrović, Antun, editor. LARUS / II / 1948. *Published for Smithsonian Institution and the National Science Foundation, Washington, D.C., by the Nolit Publishing House, Belgrade, Yugoslavia.* TT 70-56067. 118 p. 1971. Serbo-Croatian original published by Institute of Ornithology in 1948. [Translation available from National Technical Information Service, Springfield, Va.] *WR 145: 53*

The following papers are included in this issue: *Bird banding by the Ornithological Institute, Zagreb, in 1947,* Renata Kroneisl; *Some ornithological observations from Pomorijsko Lake on the Black Sea,* Pavel Pateff; *Some systematic notes on the birds of the Adriatic Coast,* András Keve; *Brief note on the distribution of Yugoslav* Picidae, Vladimir Martino; *On recoveries of the broad-billed sandpiper* (Limicola falcinellus falcinellus *(Pontopp.)) in Yugoslavia,* Dragutin Rucner; *Data on the arrival of the snow finch* (Montifringilla n. nivalis *(L.)) and snow bunting* (Plectrophenax n. nivalis *(L.)) in the area of the Yugoslav ornithofauna,* Dragutin Rucner; *On the nesting of* Corvus frugilegus frugilegus *L. in Croatia,* Stjepan Ivković; *Ornithological observations on the Jadro River near Split,* Stanko L. Karaman; Muscicapa parva parva *Bechstein as a nester on Medvednica Mountain in Croatia,* Renata Kroneisl; *On the red-breasted flycatcher* Muscicapa parva parva *Bechst. in Serbia,* Sergije D. Matvejev; *Birds on the Skopje area (Supplement),* Sergije D. Matvejev; *Ornithofauna of Vardar Park in Skopje,* Stanko L. Karaman; *Ornithological excursion to Šar-Planina Mountain,* Stanislav Delić; *Data on the role of the rose-colored starling* (Pastor roseus *(L.)) in control of locusts in Macedonia,* Lavrentije D. Mazaev; *Curiosities from the biology of some species of* Strigidae *in captivity,* Konstantin Igalffy; and *Genesis of geographical variations in the plumage coloration of birds,* Vladislav Vasić.

Mayr, Ernst. CONTINENTAL DRIFT AND THE HISTORY OF THE AUSTRALIAN BIRD FAUNA. *Bmu* 72(1): 26-28. Jan. 1972. *WR 145: 53*

[Harvard Coll., Cambridge, Mass.] "This much is certain, however, that the longstanding thesis that Australia received nearly all of its bird life from south-eastern Asia through island-hopping is still fully valid. Only further research can elucidate whether (and if so, which) other routes were used in the Mesozoic and early Tertiary."

Merseyside Naturalists' Association. NORTH-WESTERN BIRD REPORT 1966-1971. *Merseyside Naturalists' Ass.* 64 p. + 5 pls. 1971. Price 40d. *WR 145: 54*
[Hardy: 47 Woodsorrel Road, Liverpool, England.] Two papers of interest to our readers are: Ornithology of Liverpool & North-West Area, Morecambe Bay-Anglesey, Eric Hardy and others; and The preen gland of birds, R. J. Kennedy.

Panfil, Jan. ROZMIESZCZENIE, LICZEBNOŚĆ I OCHRONA NIEKTÓRYCH PTAKÓW NA POJEZIERZU MAZURSKIM. [THE DISTRIBUTION, CENSUS, AND PROTECTION OF CERTAIN BIRD SPECIES IN THE MAZURIAN LAKE DISTRICT.] *Chrońmy Przyrodę Ojczystą* 24(5): 21-34, 7 figs. Sept.-Oct. 1968. In Polish with English summ. *WR 145: 54*
"Tetrastes bonasia, Lyrurus tetrix, Anser anser, A. fabalis, A. neglectus, Ardea cinerea, Ciconia nigra, and *Grus grus."*

Parkes, Kenneth C. TAXONOMIC AND DISTRIBUTIONAL NOTES ON PHILIPPINE BIRDS. *Nemouria, Occas. Pap. Del. Mus. Natur. Hist.* no. 4. 67 p. 15 Dec. 1971. *WR 145: 54*
Information on taxonomy, nomenclature, distribution, and plumages of a number of species of Philippine birds is presented.--From summ.

Rucner, Renata, editor. LARUS / XIX / 1965. *Published for Smithsonian Institution and the National Science Foundation, Washington, D.C., by the Nolit Publishing House, Belgrade, Yugoslavia.* TT 68-500064. 220 p. 1969. Serbo-Croatian original published by Institute of Ornithology in 1965. [Translation available from U.S. Dep. Commerce, Clearinghouse for Federal Scientific and Technical Information, Springfield, Va.] *WR 145: 54*
The following papers are included in this issue: *Bird banding in 1963 and 1964. 1. Results of bird banding carried out by the Ornithological Department of the Biological Institute, University of Zagreb, 16th report. 2. Foreign recoveries in Yugoslavia, 13th report,* Ljubica Štromar; *Qualitative and quantitative avifaunal stand surveys of some forest communities in West Croatia,* Renata Rucner; *On the ecological significance of the ornithofauna of the area of Klanjec (Hrvatsko Zagorje),* Dragutin Rucner; *Recent data of the collared turtle dove,* Streptopelia decaocto decaocto *(Friv.),* László Szlivka; *Four years of banding herring gulls* (Larus argentatus *Pontopp.) on the islets of Mrkan and Bobara,* Ljubica Štromar; *Daily rhythm of bird movements recorded during the fall,* Ljubica Štromar; *Spring-time ornithological observations near Rovinj, Istria,* H. Kramer, B. Liekefedt, J. Niethammer, and G. von Papen; *Long-legged buzzard,* Buteo rufinus, *in the Demir-Kapija Gorge,* Paul Géroudet; *On the taxonomic position of the Carpathian crested tit,* Parus cristatus, István Kohl; *Systematic revision of starlings,* Sturnus vulgaris *L., in the Black Sea area,* Dan Munteanu; *The eider,* Somateria mollissima *(L.), an infrequent migrant of the Yugoslav ornithofauna,* Djordje Mirić; and *Faunistic notes from the shores of the Black Sea in Bulgaria,* Kurt Grössler.

Svensson, S. [WORK LOAD AS RELATED TO EFFECTIVITY OF SQUARE KILOMETER CENSUSES IN SCANIA.] *Vår Fågelvärld* 30: 15-18. 1971. [From Auk 89(1), 1972. In Swedish with English summ.] *WR 145: 54*

BIRDS--TECHNIQUES

Clark, R. B. FIRST ANNUAL REPORT OF THE ADVISORY COMMITTEE ON OIL POLLUTION OF THE SEA RESEARCH UNIT ON THE REHABILITATION OF OILED SEABIRDS. *Dep. Zool., Univ. Newcastle upon Tyne, England.* 1970. [From Auk 89(1), 1972.] *WR 145: 54*

Clark, R. B., and R. J. Kennedy. HOW OILED SEABIRDS ARE CLEANED. ADVISORY COMMITTEE ON OIL POLLUTION OF THE SEA RESEARCH UNIT ON THE REHABILITATION OF OILED SEABIRDS. *Dep. Zool., Univ. Newcastle upon Tyne, England.* 48 p. 1971. [From Auk 89(1), 1972.] *WR 145: 54*

Drost, R. GRUNDSÄTZLICHES ZUR ALTERSBESTIMMUNG LEBENDER SPERLINGSVÖGEL. [PRINCIPLES OF AGING LIVING YELLOWHAMMERS.] *Vogelwarte* 25: 6-13. 1969. [From Auk 88(4), 1971. In German with English summ.] *WR 145: 55*
"Emberiza citrinella."

Haneda, Kenzo, Sakae Maruyama, Toshiko Horiuchi, Nobuaki Kitajima, Tohru Tawara, Michiko Rokugawa, Humikazu Hosoda, and Masahide Kumagai. [ON THE UTILIZATION OF THE NEST BOXES IN THE GARDEN OF INSTITUTE OF NATURAL EDUCATION OF SHIGA HEIGHTS IN 1970.] *Bull. Inst. Natur. Educ. Shiga Heights* 9. p. 59-64, illus. 1970. [From Biol. Abstr. 53(1), 1972. In Japanese with English summ.] *WR 145: 55*
[Shinshu Univ., Matsumoto, Japan.] *"Parus ater, P. major* and *Glirulus japonicus."*

Havlín, Jiří. NEBEZPEČÍ KŘÍDELNÍCH ZNAČEK. [DANGER OF WING-TAGGING.] *Vertebr. Zprávy* 1969(2): 67-70, 2 figs. 1969. In Czech with English summ. *WR 145: 55*
Wing-tagging modifications for grebes, gallinules and some species of ducks are recommended.

Lindau, A. [PHOTOGRAPHING BIRDS BY CAR IN WINTER.] *Vår Fågelvärld* 30: 1-5. 1971. [From Auk 89(1), 1972. In (Swedish).] *WR 145: 55*

Longuet-Higgins, M. S. ON THE SHANNON-WEAVER INDEX OF DIVERSITY, IN RELATION TO THE DISTRIBUTION OF SPECIES IN BIRD CENSUSES. *Theor. Pop. Biol.* 2(3): 271-289, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 55*
[Cambridge Univ., Cambridge, England.]

Mott, Donald F. AGEING HOUSE FINCHES BY WING COVERT WEAR. *Western Bird Bander* 45(3): 36-37, 1 fig. July 1970. *WR 145: 55*
[USDI, Cornelius, Oreg.] *"Carpodacus mexicanus."*

Sperry, T. M. A COMPARISON OF MID-WINTER BIRD CENSUS METHODS IN SOUTHEASTERN KANSAS. *Kans. Ornithol. Soc. Bull.* 21: 17-22. 1970. [From Auk 88(4), 1971.] *WR 145: 55*

Weise, Charles M. RELATIVE ABUNDANCE OF SMALL LANDBIRDS IN SOUTHEASTERN WISCONSIN. *Passenger Pigeon* 33(4): 173-188, 1 fig. Winter 1971. *WR 145: 55*
Three mist-net samples from S.E. Wisconsin are compared with each other and with two Wisconsin TV tower kill samples. The mist-net samples give a fairly consistent picture of relative abundance of small land birds in S.E. Wisconsin in the fall. What differences exist are mostly ascribable to differences in habitat in the mist-netting areas. The Wisconsin TV tower samples consisted almost entirely of warblers and vireos. When the comparison was confined to these two groups, the mist-net samples and TV tower samples were in general concordance, but with conspicuous disagreement in certain species.--From summ.

Weller, Milton W., and Dirk V. Derksen. USE OF TIME-LAPSE PHOTOGRAPHY TO STUDY NESTING ACTIVITIES OF BIRDS. *Auk* 89(1): 196-200, 2 figs. Jan. 1972. *WR 145: 55*
[Iowa State Univ., Ames.] Photographs were taken at one-minute intervals throughout the nesting periods of birds studied. "Perhaps the greatest disadvantage to the system is the lengthy process of analysis."--Courtesy/ Paul A. Stewart.

BIRDS--MORPHOLOGY & PHYSIOLOGY

Aschoff, J., and H. Pohl. DER RUHEUMSATZ VON VÖGELN ALS FUNKTION DER TAGESZEIT UND DER KÖRPERGRÖSSE. [THE RESTING METABOLISM OF BIRDS AS A FUNCTION OF DAYLIGHT AND STATURE.] *J. Ornithol.* 111: 38-47. 1970. [From Auk 88(4), 1971. In German with English summ.] *WR 145: 55*

Douthwaite, R. J. WING MOULT IN THE PIED KINGFISHER *CERYLE RUDIS* (LINN.). *Bull. British Ornithol. Club* 91(6): 147-149, 1 fig. 20 Dec. 1971. *WR 145: 56*

Epple, August, Gordon H. Orians, Donald S. Farner, and Robert Alan Lewis. THE PHOTOPERIODIC TESTICULAR RESPONSE OF A TROPICAL FINCH, *ZONOTRICHIA CAPENSIS COSTARICENSIS*. *Condor* 74(1): 1-4. Spring 1972. *WR 145: 56*
[307 South Eleventh St., Philadelphia, Pa.] A series of experiments under controlled conditions clearly demonstrates the existence of photoperiodic testicular responses in *Zonotrichia capensis costaricensis*. A consideration of the natural breeding cycles of *costaricensis* leads to the tentative conclusion that photoperiodic mechanisms may have no more than a minor role, if any, in reproductive periodicity.--From summ.

Gebhardt, Sandy. EYE COLOR IN BLUE JAYS. *Inland Bird-Banding News* 43(2-3): 52-53. Mar.-June 1971. *WR 145: 56*
[Springfield, Ohio.] *"Cyanocitta cristata."*

Haneda, K., and T. Shinoda. [A STUDY OF BREEDING BIOLOGY OF THE JAPANESE WAGTAIL.] *Misc. Rep. Yamashina's Inst. Ornithol.* 5: 602-622. 1969. [From Auk 88(4), 1971. In Japanese with English summ.] *WR 145: 56*
"Motacilla grandis and *Corvus corone."*

Haukioja, Erkki. SUMMER SCHEDULE OF SOME SUBARCTIC PASSERINE BIRDS WITH REFERENCE TO POSTNUPTIAL MOULT. *Ann. Univ. Turku. Ser. A II Biol. Geogr.* 46: 60-69, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 56*
[Univ. Turku, Turku, Finland.] Data on 11 spp.

King, James R. POSTNUPTIAL AND POSTJUVENAL MOLT IN RUFOUS-COLLARED SPARROWS IN NORTHWESTERN ARGENTINA. *Condor* 74(1): 5-16, 6 figs. Spring 1972. *WR 145: 56*
[Wash. State Univ., Pullman.] The postnuptial and postjuvenal molts of *Zonotrichia capensis* are described in populations inhabiting three biotopes (chaco woodland, transition-zone savannah, and mountain semi-desert) at 27°S latitude in Argentina. Patterns of molt are summarized and compared for *Zonotrichia* spp. in Costa Rica, Colombia, Perd, northern Argentina, and North America. Some hypotheses are offered concerning evolutionary trends in molt patterns.--From summ.

Mayr, I. ÜBER DIE ÖLKUGELVERTEILUNG IN DER RETINA MÄNNLICHER UND WEIBLICHER FEUERWEBER (*EUPLECTES ORIX FRANCISCANUS*). [ON THE OIL DROPLETS IN THE RETINAS OF MALE AND FEMALE RED BISHOPS (*EUPLECTES ORIX FRANCISCANUS*).] *J. Ornithol.* 111: 30-37. 1970. [From Auk 88(4), 1971. In German with English summ.] *WR 145: 56*

Moroney, D. PLUMAGE CHANGES IN THE SUPERB LYREBIRD. *Emu* 72(1): 17-21, 4 figs. Jan. 1972. *WR 145: 56*
[10 Hughes Street, Yarraville, Victoria, Australia.] *"Menura novaehollandiae."*

Niles, David M. MOLT CYCLES OF PURPLE MARTINS (*PROGNE SUBIS*). *Condor* 74(1): 61-71, 6 figs. Spring 1972. *WR 145: 56*
[Univ. Kans., Lawrence.] The physical pattern of the molts of purple martins is briefly described.--From summ.

Quay, W. B. INFREQUENCY OF PINEAL ATROPHY AMONG BIRDS AND ITS RELATION TO NOCTURNALITY. *Condor* 74(1): 33-45, 6 figs. Spring 1972. *WR 145: 56*
[Univ. Calif., Berkeley.] Summary: A survey was made of the size and state of the pineal organ in adult birds representing 23 orders, 58 families, and 121 species with particular reference to possible association with nocturnal behavioral activity. Pineal reduction or atrophy was found to occur only within two groups, Procellariiformes and Strigiformes, and within these an inverse relationship between pineal size and nocturnality was suggested. Although pineal atrophy occurred only in these primitively and most conspicuously nocturnal groups, it was not found in nocturnal species representing other and diverse genera from *Apteryx* to *Burhinus*. The relation of pineal atrophy in birds with nocturnality is thus not obligatory and is likely to be indirect, although possibly of adaptive significance.

Stephenson, James D., and Glen Smart. EGG MEASUREMENTS FOR THREE ENDANGERED SPECIES. *Auk* 89(1): 191-192. Jan. 1972. *WR 145: 57*
[Patuxent Wildl. Res. Center, Laurel, Md.] Includes measurements of eggs of whooping cranes *(Grus americana)*, Aleutian Canada geese *(Branta canadensis leucopareia)*, and masked bobwhite quail *(Colinus virginiana ridgwayi)*.--Courtesy/ Paul A. Stewart.

Stiles, F. Gary. AGE AND SEX DETERMINATION IN RUFOUS AND ALLEN HUMMINGBIRDS. *Condor* 74(1): 25-32, 4 figs. Spring 1972. *WR 145: 57*
[c/o Organization for Tropical Studies, Apartado 16, Cuidad Univ., Costa Rica.] Includes a key to plumages of rufous *(Selasphorus rufus)* and Allen *(S. sasin)* hummingbirds.

BIRDS--BEHAVIOR

Alsop, Fred J. III. GREAT CRESTED FLYCATCHER OBSERVED COPULATING WITH AN IMMATURE EASTERN BLUEBIRD. *Wilson Bull.* 83(3): 312. Sept. 1971. *WR 145: 57*
[Univ. Tenn., Knoxville.] In June, a male great crested flycatcher *(Myiarchus crinitus)* copulated with an immature eastern bluebird *(Sialia sialis)*.--Courtesy/ Paul A. Stewart.

Anderson, Bertin W. MAN'S INFLUENCE ON HYBRIDIZATION IN TWO AVIAN SPECIES IN SOUTH DAKOTA. *Condor* 73(3): 342-347, 1 fig. Autumn 1971. *WR 145: 57*
[Northwestern State Coll., Alva, Okla.] Recent changes in South Dakota habitats and their probable influence on hybridization of flickers *(Colaptes a. auratus* and *C. a. cafer)* and orioles *(Icterus g. galbula* and *I. g. bullockii)* are considered.--Courtesy/ Paul A. Stewart.

Anderson, William L., Stanley L. Etter, and G. Blair Joselyn. ROBINS NIGHT-ROOSTING IN OPEN FIELDS. *Wilson Bull.* 83(4): 443-444. Dec. 1971. *WR 145: 57*
[Ill. Natur. Hist. Surv., Urbana.] Robins *(Turdus migratorius)* roosted on the ground in fields with vegetation about six inches high.--Courtesy/ Paul A. Stewart.

Austin, George T., and E. Linwood Smith. WINTER FORAGING ECOLOGY OF MIXED INSECTIVOROUS BIRD FLOCKS IN OAK WOODLAND IN SOUTHERN ARIZONA. *Condor* 74(1): 17-24, 4 figs. Spring 1972. *WR 145: 57*
[Univ. Ariz., Tucson.]

Bock, Carl E. PAIRING IN HYBRID FLICKER POPULATIONS IN EASTERN COLORADO. *Auk* 88(4): 921-924, 1 fig. Oct. 1971. *WR 145: 57*
[Univ. Colo., Boulder.] Information presented supports the conclusion that *Colaptes auratus* and *C. cafer* are conspecific.--Courtesy/ Paul A. Stewart.

Borror, Donald J. YELLOW-GREEN VIREO IN ARIZONA, WITH NOTES ON VIREO SONGS. *Condor* 74(1): 80-86, 3 figs. Spring 1972. *WR 145: 57*
[Ohio State Univ., Columbus.] Description of the songs of *Vireo flavoviridis* including graphs comparing them with those of Hutton's vireo, gray vireo, yellow-throated vireo, solitary vireo, black-whiskered vireo, red-eyed vireo, and the Philadelphia vireo.

Boswall, Jeffery. NEW PALEARCTIC BIRD SOUND RECORDINGS DURING 1970. *British Birds* 64(10): 431-434. Oct. 1971. *WR 145: 57*
[Natur. Hist. Unit, British Broadcasting Corp., Whiteladies Rd., Bristol, England.]

Britton, P. L. TWO SYMPATRIC CANARIES, *SERINUS KOLIENSIS* AND *S. CITRINELLOIDES*, IN WESTERN KENYA. *Auk* 88(4): 911-914, 1 fig. Oct. 1971. *WR 145: 57*
[Sawagongo Secondary School, Private Bag, Yala, Kenya.] Comments on taxonomy, breeding biology, and ecology.--Courtesy/ Paul A. Stewart.

Broun, Maurice. HOUSE SPARROWS FEEDING YOUNG AT NIGHT. *Auk* 88(4): 924-925. Oct. 1971. *WR 145: 58*

[Strawberry Hill Farm, New Ringgold, Pa.] House sparrows *(Passer domesticus)* captured insects gathered around a floodlight and apparently carried them to their young.--Courtesy/ Paul A. Stewart.

Caccamise, Donald Francis. COMPETITIVE RELATIONSHIPS OF THE COMMON AND LESSER NIGHTHAWKS. *Ph.D. thesis, N. Mex. State Univ.* 95 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(9), 1972.] *WR 145: 58*

"Chordeiles minor and *C. acutipennis."*

Collias, N. E., M. Brandman, J. K. Victoria, L. F. Kiff, and C. E. Rischer. SOCIAL FACILITATION IN WEAVERBIRDS: EFFECTS OF VARYING THE SEX RATIO. *Ecology* 52(5): 829-836, 1 fig. Late Summer 1971. *WR 145: 58*

[Univ. Calif., Los Angeles.] When single male village weaverbirds *(Ploceus cucullatus)* were caged with several females, males had more nests accepted by females than when more males were present. When the breeding season started to decline, adding more males stimulated renewed nest building by resident males. The average rate at which males built and tore down their nests doubled when the number of females was four-times increased, and the frequency with which the males gave the nest-advertisement display tripled.--From abstr. Courtesy/ Paul A. Stewart.

Collias, N. E., J. K. Victoria, and R. J. Shallenberger. SOCIAL FACILITATION IN WEAVERBIRDS: IMPORTANCE OF COLONY SIZE. *Ecology* 52(5): 823-828, 1 fig. Late Summer 1971. *WR 145: 58*

[Univ. Calif., Los Angeles.] Abstract: During the height of the breeding season there was relatively little or no social facilitation of nest-building when African Village Weaverbirds *(Ploceus cucullatus cucullatus)* kept in large outdoor aviaries in very small and in larger experimental colonies were compared. The sex ratio was kept the same (1:1) irrespective of size of colony. Social stimulation by crowding of the birds early or late in the breeding season led to the earlier onset and later cessation of nest-building, and so extended the breeding season over a longer period of time. The implications of this finding are discussed.--Courtesy/ Paul A. Stewart.

Congreve, P. TORPIDITY IN THE WHITE-BACKED SWALLOW. *Emu* 72(1): 32-33. Jan. 1972. *WR 145: 58*

[Yanchep Nat. Park, Yanchep, Western Australia.] *"Cheramoeca leucosternum."*

Coutlee, Ellen L. VOCALIZATIONS IN THE GENUS *SPINUS*. *Anim. Behav.* 19(3): 556-565, 9 figs. Aug. 1971. *WR 145: 58*

[Univ. Calif., Los Angeles.] Abstract: The call notes of *Spinus lawrencei* are higher in pitch and have a narrower frequency range than those of *S. psaltria* and *S. tristis*. This reflects the fact that *lawrencei* and *psaltria* breed sympatrically while *tristis* is ecologically isolated from them. The contact calls and courtship calls are the most distinctive for each species, a special advantage for these birds which often flock together during winter months. Similarity in threat, alarm and distress cries shows lack of selection pressure for species specificity and is advantageous in mixed flocks. Both females and juveniles give a rhythmic food-begging call. Juvenile males give a warbling subsong. Full song is produced only by adult males and functions both in territorial and reproductive activities.

Curio, E. FUNKTIONSWEISE UND STAMMESGESCHICHTE DES FLUGFEINDERKENNENS EINIGER DARWINFINKEN (GEOSPIZINAE). [ACTIVITY PATTERNS AND PHYLOGENY OF THE RECOGNITION OF AVIAN PREDATORS BY SOME FINCHES (GEOSPIZINAE).] *Z. Tierpsychol.* 26: 394-487. 1969. [From Auk 89(1), 1972. In German with English summ.] *WR 145: 58*

Some islands of the Galapagos have both the Galapagos Hawk and the Short-eared Owl, others only one, and still others none. All Galapagos finches show some fear of these avian predators, but those exposed to them frequently show more

fear than those that lack exposure. Level of response to a sitting avian predator is directly dependent upon its rarity; apparently finches habituate to perched hawks or owls if they are seen frequently. The finches show little fear of the Galapagos Mockingbird, although it hunts after them viciously.

Davies, S. J. J. F. RESULTS OF 40 HOURS' CONTINUOUS WATCH AT FIVE WATERPOINTS IN AN AUSTRALIAN DESERT. *Emu* 72(1): 8-12, 1 fig. Jan. 1972. *WR 145: 59*
[CSIRO, Clayton Road, Helena Valley, Western Australia.] Continuous observations made over 40 hours at five watering points in an arid area of Western Australia showed that 24 species drank, even though the weather was cool. Thirteen of these species visited the water on more than ten occasions.--From abstr.

Diamond, Jared M. FURTHER EXAMPLES OF DUAL SINGING BY SOUTHWEST PACIFIC BIRDS. *Auk* 89(1): 180-183, 1 fig. Jan. 1972. *WR 145: 59*
[Univ. Calif. Med. Cent., Los Angeles.] Nine cases of assumed antiphonal duets among monomorphic species in New Guinea, New Britain, Fiji, and Samoa are described.--Courtesy/ Paul A. Stewart.

Emlen, Stephen T. AN EXPERIMENTAL ANALYSIS OF THE PARAMETERS OF BIRD SONG ELICITING SPECIES RECOGNITION. *Behaviour* 41(1-2): 130-171, 19 figs. 1972. In English with German summ. *WR 145: 59*
[Cornell Univ., Ithaca, N.Y.] Studies of the acoustical communication system of the indigo bunting *(Passerina cyanea)* by means of playback experiments. Comparisons are made with data from four other species of passerines.

Evans, S. M., and G. R. Patterson. THE SYNCHRONIZATION OF BEHAVIOUR IN FLOCKS OF ESTRILDINE FINCHES. *Anim. Behav.* 19(3): 429-438, 2 figs. Aug. 1971. *WR 145: 59*
[Univ. Newcastle upon Tyne, Newcastle upon Tyne, England.] Feeding, flighting and clumping are all synchronized in captive flocks of *Amandava subflava* and *Uraeginthus bengalus*. Feeding and flighting in *A. subflava*, and flighting in *U. bengalus*, are synchronized by both visual releasers and calls, whereas clumping in both species and feeding in *U. bengalus* are synchronized by birds reacting to the sight of others performing these activities.--From summ.

Gubanich, Alan A. AVIAN UTILIZATION OF DESERT WATERHOLES. *M.S. thesis, Univ. Ariz.* ix + 118 p., 10 figs. 1966. *WR 145: 59*
Courtesy/ Henry M. Reeves.

Güttinger, H. R. ZUR EVOLUTION VON VERHALTENSWEISEN UND LAUTÄUSSERUNGEN BEI PRACHTFINKEN (ESTRILDIDAE). [ON THE EVOLUTION OF BEHAVIOR PATTERNS AND VOCALIZATIONS OF FINCHES (ESTRILDIDAE).] *Z. Tierpsychol.* 27: 1011-1075. 1970. [From Auk 89(1), 1972. In German with English summ.] *WR 145: 59*
Data on 16 spp.

Haldeman, John R. AN ABERRANT INCUBATION STIMULUS. *Wilson Bull.* 83(3): 317. Sept. 1971. *WR 145: 59*
[Univ. Ark., Fayetteville.] A female cardinal *(Richmondena cardinalis)* continued to set on its nest after its eggs were removed and the nest contained only a thermistor telethermometer probe. Setting on the nest was discontinued when the probe was removed, after 27 days of "incubation."--Courtesy/ Paul A. Stewart.

Haneda, Kenzo, and Shinpei Hasegawa. [THE BREEDING ECOLOGY OF CHINESE TREE-PIPIT.] *Bull. Inst. Natur. Educ. Shiga Heights* 9. p. 23-30, illus. 1970. [From Biol. Abstr. 53(1), 1972. In Japanese with English summ.] *WR 145: 59*
[Shinshu Univ., Matsumoto, Japan.] *"Anthus hodgsoni."*

Hellebrekers, W. P. J. OOELOGISCHE EN NIDOLOGISCHE MEDEDELINGEN IN 1971: (EN EERDER). [COMMUNICATIONS ON BIRD EGGS AND NESTS IN 1971 (AND EARLIER).] *Limosa* 44(1-2): 66. 1971. [From Biol. Abstr. 53(2), 1972. In Dutch with English summ.] *WR 145: 59*
[Insulineweg 31, Delft, Netherlands.]

Herbert, Kathleen Green Skelton. STARLING FEEDS YOUNG ROBINS. *Wilson Bull.* 83(3): 316-317. Sept. 1971. *WR 145: 60*
[R.D. 2, Middletown, Del.] A starling *(Sturnus vulgaris)* fed nestling robins *(Turdus migratorius)*, at first along with the female robin and later alone.--Courtesy/ Paul A. Stewart.

Johnston, David W. NICHE RELATIONSHIPS AMONG SOME DECIDUOUS FOREST FLY-CATCHERS. *Auk* 88(4): 796-804, 3 figs. Oct. 1971. *WR 145: 60*
[Univ. Fla., Gainesville.] Effective partitioning of needed resources is attained among four species of Tyrannidae by difference in body size, bill size, territory size, feeding heights, nesting heights, choice of vegetation density, and choice of food.--Courtesy/ Paul A. Stewart.

Kikkawa, J. SOCIAL HIERARCHY IN WINTER FLOCKS OF THE GREY-BREASTED SILVEREYE *ZOSTEROPS LATERALIS* (LATHAM). *Japanese J. Ecol.* 18: 235-246. 1968. [From Auk 88(4), 1971.] *WR 145: 60*

Kilham, Lawrence. REPRODUCTIVE BEHAVIOR OF WHITE-BREASTED NUTHATCHES. II. COURTSHIP. *Auk* 89(1): 115-129, 4 figs. Jan. 1972. *WR 145: 60*
[Dartmouth Med. School, Hanover, N.H.] Intimate notes, courtship song, courtship feeding, and copulatory behavior of white-breasted nuthatches *(Sita carolinensis)* are major topics of discussion. Comparisons are also made with other species.--Courtesy/ Paul A. Stewart.

Kingery, Hugh E., and Paul R. Julian. CASSIN'S SPARROW PARASITIZED BY COWBIRD. *Wilson Bull.* 83(4): 439. Dec. 1971. *WR 145: 60*
[10 Emerson St., Denver, Colo.] Nest of an *Aimophila cassinii* contained an egg thought to be that of a *Molothrus ater*.--Courtesy/ Paul A. Stewart.

Kooyman, G. L., C. M. Drabek, R. Elsner, and W. B. Campbell. DIVING BEHAVIOR OF THE EMPEROR PENGUIN, *APTENODYTES FORSTERI*. *Auk* 88(4): 775-795, 8 figs. Oct. 1971. *WR 145: 60*
[Univ. Calif., San Diego.] The maximum period of submergence was 18 minutes, the maximum depth of diving was 265 m, and the most rapid depth change 120 m/min. The greatest swimming speed was 9.6 km/hr. Birds seemed to rely on vision for orientation when swimming beneath ice.--Courtesy/ Paul A. Stewart.

Kreig, D. C. THE BEHAVIORAL PATTERNS OF THE EASTERN BLUEBIRD *(SIALIA SIALIS)*. *N.Y. State Mus. Sci. Serv. Bull.* 415: 1-139. 1971. [From Auk 88(4), 1971.] *WR 145: 60*

Kroodsma, Donald E. BIGAMY IN THE BEWICK'S WREN? *Auk* 89(1): 185-187. Jan. 1972. *WR 145: 60*
[Oreg. State Univ., Corvallis.] The number of unmated males and the number of "bigamists" indicated a mating system among Bewick's wrens *(Thryomanes bewickii)* very similar to that earlier reported in the house wren *(Troglodytes aedon)*.--Courtesy/ Paul A. Stewart.

Lamba, B. S. NIDIFICATION OF SOME COMMON INDIAN BIRDS: NO. 8. THE SHIKRA, *ACCIPITER BADIUS* (GMELIN). *Rec. Zool. Surv. India* 62(1/2): 11-20. 1970. [From Biol. Abstr. 53(1), 1972.] *WR 145: 60*
[Zool. Surv. India, Poona, Maharashtra, India.]

Laskey, Amelia R. BLUEBIRDS SUCCESSFULLY NESTING IN HOUSE UNDER CONSTRUCTION. *Wilson Bull.* 83(4): 440-441. Dec. 1971. *WR 145: 60*
[1521 Graybar Lane, Nashville, Tenn.] The bluebird *(Sialia sialis)* nested in the hollow of a cement block and did not desert the nest despite the construction activities of the workmen.--Courtesy/ Paul A. Stewart.

Leck, Charles F. MEASUREMENT OF SOCIAL ATTRACTIONS BETWEEN TROPICAL PASSERINE BIRDS. *Wilson Bull.* 83(3): 278-283, 3 figs. Sept. 1971. *WR 145: 61*
[Rutgers Univ., New Brunswick, N.J.] Intraspecific attractions, usually pair bonds, dominated the interactions. Interspecific attractions among the fruit-eating birds were weaker than has been reported among insectivorous species.--Courtesy/ Paul A. Stewart.

Leck, Charles F. SOME SPATIAL AND TEMPORAL DIMENSIONS OF KINGBIRD FORAGING-FLIGHTS. *Wilson Bull.* 83(3): 310-311. Sept. 1971. *WR 145: 61*
[Rutgers Univ., New Brunswick, N.J.] The length and duration of feeding flights of kingbirds *(Tyrannus tyrannus)* indicate the dispersion and abundance of prey.--Courtesy/ Paul A. Stewart.

Leck, Charles F. SEASONAL CHANGES IN FEEDING PRESSURES OF FRUIT- AND NECTAR-EATING BIRDS IN PANAMÁ. *Condor* 74(1): 54-60, 1 fig. Spring 1972. *WR 145: 61*
[Rutgers Univ., New Brunswick, N.J.] Summary: A study of the feeding pressures of fruit- and nectar-eating birds revealed significant seasonality at Barro Colorado Island in the Canal Zone. The feeding pressures, as measured by a number of natural parameters, were significantly higher during the wet season when production of flowers and fruit were much reduced. These parameters included rates of visitation per resource, quality of fruits, numbers of "alternate" foods in the diets, and amounts of aggressive behavior. The reduced pressures of the dry season are correlated with increased flower (early) and fruit (later) production. Comparisons with other areas indicate that such seasonality is probably common to most of the tropics.

Miller, Frank L. BIRDS NESTING AT THE KAZAN FALLS. *Auk* 89(1): 183-185. Jan. 1972. *WR 145: 61*
[Canadian Wildl. Serv., 2721 Highway 31, Ottawa, Ontario, Canada.] Observations on the nesting of five species.--Courtesy/ Paul A. Stewart.

Mueller, Helmut C., Maxeen G. Biben, and Harold F. Sears. FEEDING INTERACTIONS BETWEEN PIED-BILLED GREBES AND HERONS. *Auk* 89(1): 190. Jan. 1972. *WR 145: 61*
[Univ. N.C., Chapel Hill.] Pied-billed grebes *(Podylimbus podiceps)* appeared to be attracted by feeding herons, coming to and leaving a feeding area in association with the herons.--Courtesy/ Paul A. Stewart.

Mueller, Helmut C., and Nancy S. Mueller. FLASHES OF WHITE IN THE WINGS OF OTHER SPECIES ELICIT TERRITORIAL BEHAVIOR IN A MOCKINGBIRD. *Wilson Bull.* 83(4): 442-443. Dec. 1971. *WR 145: 61*
[Univ. N.C., Chapel Hill.] Evening grosbeaks *(Hesperiphona vespertina)* and red-bellied woodpeckers *(Centurus carolinus)* were attacked by mockingbirds *(Mimus polyglottos)* with more virulence and at greater distances from the feeder than other species, and these were the only species visiting the feeder exhibiting flashes of white in their wings in flight.--Courtesy/ Paul A. Stewart.

Oatley, T. B. ROBIN HOSTS OF THE REDCHESTED CUCKOO IN NATAL. *Ostrich* 41: 232-236. 1970. [From Auk 88(4), 1971.] *WR 145: 61*
"Cuculus solitarius."

Rowan, M. K. THE FOODS OF SOUTH AFRICAN BIRDS. *Ostrich* suppl. no. 8. p. 343-356. 1970. *WR 145: 61*
[Percy FitzPatrick Inst., Cape Town, South Africa.]

Samuel, David E. THE BREEDING BIOLOGY OF BARN AND CLIFF SWALLOWS IN WEST VIRGINIA. *Wilson Bull.* 83(3): 284-301, 5 figs. Sept. 1971. *WR 145: 61*
[W. Va. Univ., Morgantown.] Numerous differences are noted in the breeding biologies of barn and cliff swallows *(Hirundo rustica* and *Petrochelidon pyrrhonota)*.--Courtesy/ Paul A. Stewart.

Samuel, David E. VOCAL REPERTOIRES OF SYMPATRIC BARN AND CLIFF SWALLOWS. *Auk* 88(4): 839-855, 8 figs. Oct. 1971. *WR 145: 62*
[W. Va. Univ., Morgantown.] Various calls of barn and cliff swallows *(Hirundo rustica* and *Petrochelidon pyrrhonota)* are described and correlated with behavior. --Courtesy/ Paul A. Stewart.

Schubert, G., and K. Schubert. LAUTFORMEN UND VERWANDTSCHAFTLICHE BEZIEHUNGEN EINIGER LAUBSÄNGER *(PHYLLOSCOPUS)*. [SPECTROGRAMS AND PHYLETIC COMPARISONS BETWEEN SOME WARBLERS *(PHYLLOSCOPUS).*] *Z. Tierpsychol.* 26: 7-22. 1969. [From Auk 89(1), 1972. In German with English summ.] *WR 145: 62*
Sound spectogram analyses of 9 spp. of *Phylloscopus.*

Sharland, R. E. CUCKOO CALLS. *Nigerian Ornithol. Soc. Bull.* 6: 122-123. 1969. [From Auk 88(4), 1971.] *WR 145: 62*

Skinner, N. J. NOTES ON THE BREEDING OF THE PYGMY LONG-TAILED SUNBIRD *HEDYDIPNA PLATURA* AT ZARIA. *Nigerian Ornithol. Soc. Bull.* 6: 124-126. 1969. [From Auk 88(4), 1971.] *WR 145: 62*

Slessers, Martin A. ADAPTIVE BEHAVIOR OF TITS WHICH HAVE LOST ONE EYE. *Wilson Bull.* 83(3): 312-313, 1 fig. Sept. 1971. *WR 145: 62*
[Route 4, Box 146, Brandywine, Md.] Broods were raised by a Carolina chickadee *(Parus carolinensis)* and a tufted titmouse *(P. bicolor)*, each of which had lost an eye.--Courtesy/ Paul A. Stewart.

Smith, Susan M. THE RELATIONSHIP OF GRAZING CATTLE TO FORAGING RATES IN ANIS. *Auk* 88(4): 876-880. Oct. 1971. *WR 145: 62*
[Wellesley Coll., Wellesley, Mass.] Groove-billed anis *(Crotophaga sulcirostris)* and smooth-billed anis *(C. ani)* were twice as successful in catching prey when foraging in association with cattle as when foraging without this association.--Courtesy/ Paul A. Stewart.

Smith, W. John. BEHAVIORAL CHARACTERISTICS OF SERPOPHAGININE TYRANNIDS. *Condor* 73(3): 259-286, 12 figs. Autumn 1971. *WR 145: 62*
[Univ. Pa., Philadelphia.] Taxonomic suggestions, based on behavior, are presented.--Courtesy/ Paul A. Stewart.

Stefanski, Raymond Arthur. A STUDY OF DISTRESS CALLS OF SONG, SWAMP AND WHITE-THROATED SPARROWS. *Ph.D. thesis, Univ. Toronto* (Canada). 1969. [From Diss. Abstr. Int. B Sci. Eng. 32(9), 1972.] To obtain a microfilm copy please order directly from the National Library of Canada at Ottawa. *WR 145: 62*

Sterbetz, István. MAGEVŐ APRÓMADARAK TÁPLÁLÉKVÁLOGATÁSA. [CHOICE OF FOODS BY SEED-EATING SMALL BIRDS.] *Állattani Kozl* 58(1-4): 171-172, illus. 1971. [From Biol. Abstr. 53(2), 1972. In Hungarian with German summ.] *WR 145: 62*
[Budapest, Hungary.] *"Plectorphaenax nivalis, Carduelis flavirostris,* and *Alauda arvensis."*

Thielcke, G., and H. Thielcke. DIE SOZIALEN FUNKTIONEN VERSCHIEDENER GESANGSFORMEN DES SONNENVOGELS *(LEIOTHRIX LUTEA).* [THE SOCIAL FUNCTIONS OF VARIOUS SONG TYPES OF PEKIN ROBINS *(LEIOTHRIX LUTEA).*] *Z. Tierpsychol.* 27: 177-185. 1970. [From Auk 89(1), 1972. In German with English summ.] *WR 145: 62*

Thompson, W. L., and P. L. Jane. AN ANALYSIS OF CATBIRD SONG. *Jack-Pine Warbler* 47: 115-125. 1969. [From Auk 89(1), 1972.] *WR 145: 62*
"Dumetella carolinensis."

Thompson, W. L., and J. O. Rice. CALLS OF THE INDIGO BUNTING, *PASSERINA CYANEA.* *Z. Tierpsychol.* 27: 35-46. 1970. [From Auk 89(1), 1972.] *WR 145: 62*

Vernon, C. J. PRE-INCUBATION EMBRYONIC DEVELOPMENT AND EGG "DUMPING" BY THE JACOBIN CUCKOO. *Ostrich* 41: 259-260. 1970. [From Auk 88(4), 1971.] *WR 145: 63*
"Clamator jacobinus."

Wemmer, C. IMPALING BEHAVIOUR OF THE LOGGERHEAD SHRIKE, *LANIUS LUDOVICIANUS* LINNAEUS. *Z. Tierpsychol.* 26: 208-224. 1969. [From Auk 89(1), 1972.] *WR 145: 63*

Wickler, W., and D. Uhrig. BETTELRUFE, ANTWORTSZEIT UND RASSENUNTERSCHIEDE IM BEGRÜSSUNGSDUETT DES SCHMUCKBARTVOGELS *TRACHYPHONUS D'ARNAUDII*. [BEGGING CALL, ANSWERING TIME AND RACIAL DIFFERENCES IN THE DUET SONG OF THE BARBET *(TRACHYPHONUS D'ARNAUDII).*] *Z. Tierpsychol.* 26: 651-661. 1969. [From Auk 89 (1), 1972. In German with English summ.] *WR 145: 63*

Wiley, R. Haven. COOPERATIVE ROLES IN MIXED FLOCKS OF ANTWRENS (FORMICARIIDAE). *Auk* 88(4): 881-892, 3 figs. Oct. 1971. *WR 145: 63*
[Rockefeller Univ., New York, N.Y.] In mixed flocks of antwrens, the sharp vocalizations of *Myrmotherula fulviventris* should enhance mobbing of predators, and the flash patterns of male *M. axillaris* should promote maintenance of flock cohesion by visual contact.--Courtesy/ Paul A. Stewart.

Willis, Edwin O. BREEDING OF THE WHITE-PLUMED ANTBIRD *(PITHYS ALBIFRONS)*. *Auk* 89(1): 192-193, 1 fig. Jan. 1972. *WR 145: 63*
[Oberlin Coll., Oberlin, Ohio.] Finding of a nest with eggs is reported.--Courtesy/ Paul A. Stewart.

Willis, Edwin O., and Yoshika Oniki. ECOLOGY AND NESTING BEHAVIOR OF THE CHESTNUT-BACKED ANTBIRD *(MYRMECIZA EXSUL)*. *Condor* 74(1): 87-98, 8 figs. Spring 1972. *WR 145: 63*
[Oberlin Coll., Oberlin, Ohio.] Habitat, foraging, wandering flocks, voice and displays, preening and maintenance behavior, alarm behavior, agonistic behavior and territoriality, reproductive behavior, nests and eggs, incubation, and care of nestlings of *Myrmeciza exsul* on Barro Colorado Island.

BIRDS--MIGRATION & BANDING REPORTS

Berthold, P., and V. Dorka. VERGLEICH UND DEUTUNG VON JAHRESZEITLICHEN WEGZUGS-ZUGMUSTERN AUSGEPRÄGTER UND WENIGER AUSGEPRÄGTER ZUGVÖGEL. [COMPARISON AND MEANING OF THE MIGRATORY PERIODICITY OF LONG DISTANCE AND SHORT DISTANCE MIGRATORY BIRDS.] *Vogelwarte* 25: 121-129. 1969. [From Auk 88(4), 1971. In German with English summ.] *WR 145: 63*

Broun, Maurice. APPARENT MIGRATORY BEHAVIOR IN THE HOUSE SPARROW. *Auk* 89(1): 187-189. Jan. 1972. *WR 145: 63*
[Strawberry Hill Farm, New Ringgold, Pa.] House sparrows *(Passer domesticus)* were seen moving through an area with other species that were migrating.--Courtesy/ Paul A. Stewart.

Dennis, Roy H. SCOTTISH BIRD REPORT 1970. *Scottish Birds* 6(7): 347-402 + 4 pls. Autumn 1971. *WR 145: 63*

Gnielka, Reinhard. DIE ANKUNFT DER ZUGVÖGEL ALS STATISTISCHES PROBLEM. [THE ARRIVAL OF MIGRATORY BIRDS AS A STATISTICAL PROBLEM.] *Ornithol. Mitteil.* 23(2): 33-38, 6 figs. Feb. 1971. In German. *WR 145: 63*
[Huttenstrasse 84, Halle/Saale, Germany.]

Hebrard, James J. FALL NOCTURNAL MIGRATION DURING TWO SUCCESSIVE OVERCAST DAYS. *Condor* 74(1): 106-107, 1 fig. Spring 1972. *WR 145: 63*
[Clemson Univ., Clemson, S.C.]

BIRDS--MIGRATION & BANDING REPORTS--Continued

Hudson, Robert. RECOVERIES IN GREAT BRITAIN AND IRELAND OF BIRDS RINGED ABROAD. *British Birds* 64(11): 488-501. Nov. 1971. *WR 145: 64*
[British Trust for Ornithology, Beech Grove, Tring, Hertfordshire, England.]

Leberman, Robert C., and Mary Heimerdinger Clench. BIRD-BANDING AT POWDERMILL, 1970. *Powdermill Nature Reserve, Res. Rep.* no. 28. 36 p. May 1971. *WR 145: 64*

Middlemiss, Ernest. NINETEENTH ANNUAL REPORT ON THE RONDEVLEI BIRD SANCTUARY FOR THE YEAR 1970. *The Divisional Council of the Cape.* 32 p. + 10 pls. 1970. In English and Afrikaans. *WR 145: 64*
[44 Wale Street, Cape Town, South Africa.]

Nakamura, T. [PHYSIOLOGICAL AND ECOLOGICAL STUDIES ON BIRD MIGRATION WITH SPECIAL REFERENCE TO BODY LIPIDS.] *Tori* 19: 87-92. 1969. [From Auk 88(4), 1971. In Japanese with English summ.] *WR 145: 64*
"Emberiza rustica latifascia, Passer montanus saturatus, and *Acrocephalus arundinaceus orientalis."*

Perdeck, A. C. THE STANDARD DIRECTION OF THE SCANDINAVIAN CHAFFINCH DURING AUTUMN MIGRATION THROUGHOUT ITS AREA OF PASSAGE. *Ardea* 58(3/4): 142-170, illus. 1970. [From Biol. Abstr. 53(1), 1972. In English with Dutch summ.] *WR 145: 64*
[Inst. Ecol. Res., Arnhem, Netherlands.] *"Fringilla coelebs."*

Richardson, W. John. AUTUMN MIGRATION AND WEATHER IN EASTERN CANADA: A RADAR STUDY. *Amer. Birds* 26(1): 10-17, 10 figs. Feb. 1972. *WR 145: 64*
[Cornell Univ., Ithaca, N.Y.] New information about the patterns and timing of migration in southeastern Canada. Includes observations of frequent offshore departures, reverse migrants, birds in a hurricane, and the difference in response to weather by offshore and coastal migrants.--From concl.

Wallace, D. I. M. PALAEARCTIC MIGRANTS IN WEST LAGOS: NOVEMBER 1968 TO MAY 1969. *Nigerian Ornithol. Soc. Bull.* 6: 45-49. 1969. [From Auk 88(4), 1971.] *WR 145: 64*

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Alsop, Fred J. III. AN ANNOTATED LIST OF BIRDS OBSERVED IN HANCOCK COUNTY, KENTUCKY. *Ky. Warbler* 47(4): 59-70. Nov. 1971. *WR 145: 64*
List of 163 spp.

Austin, George T., and W. Glen Bradley. THE AVIFAUNA OF CLARK COUNTY, NEVADA. *J. Ariz. Acad. Sci.* 6(4): 283-303. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 64*
[Univ. Ariz., Tucson.]

Bayliss-Smith, T. P. THE BIRDS OF ONTONG JAVA AND SIKAIANA, SOLOMON ISLANDS. *Bull. British Ornithol. Club* 92(1): 1-10. Feb. 1972. *WR 145: 64*

Belcher, Sir Charles. THE BIRDS OF KOKSTAD / EXTRACTED FROM THE NOTES OF THE LATE SIR CHARLES BELCHER. *S. African Avifauna Ser. Percy FitzPatrick Inst. African Ornithol.* no. 76. 23 p. 1971. Price 30¢. *WR 145: 64*

Brooke, R. K., and R. P. Borrett. ADDITIONS AND CORRECTIONS TO A LIST OF BIRDS OF THE SALISBURY AREA, RHODESIA. *S. African Avifauna Ser. Percy FitzPatrick Inst. African Ornithol.* no. 74. 7 p. 1971. Price 20¢. *WR 145: 64*
[P.O. Box 8081, Causeway, Rhodesia.]

Conklin, K. POST-COLUMBIAN BIRDS FROM ABACO ISLAND, BAHAMAS. *Quart. J. Fla. Acad. Sci.* 33: 237-240. 1970. [From Auk 88(4), 1971.] *WR 145: 64*

Dowsett, R. J. BIRD NOTES FROM THE CENTRAL CAMEROONS. *Nigerian Ornithol. Soc. Bull.* 6: 103-105. 1969. [From Auk 88(4), 1971.] *WR 145: 65*
Notes on 59 spp.

Dowsett, R. J. MIGRANTS AT MALAM'FATORI, LAKE CHAD, AUTUMN 1968. *Nigerian Ornithol. Soc. Bull.* 6: 39-45. 1969. [From Auk 88(4), 1971.] *WR 145: 65*
Observations on 77 spp. of Palaearctic and 22 spp. of Ethiopian migrants.

Dowsett, R. J., and A. J. Hopson. ADDITIONS AND AMENDMENTS TO THE LIST OF BIRDS OF MALAM'FATORI, LAKE CHAD. *Nigerian Ornithol. Soc. Bull.* 6: 53-55. 1969. [From Auk 88(4), 1971.] *WR 145: 65*
With addition of 43 spp. the total number is 330 spp.

Ehrhardt, Jean P. CENSUS OF THE BIRDS OF CLIPPERTON ISLAND, 1968. *Condor* 73 (4): 476-480, 1 fig. Winter 1971. *WR 145: 65*
[Museum d'Histoire Naturelle, Paris, France.] With observations on 13 spp.--Courtesy/ Paul A. Stewart.

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Annotated list of 242 forms.

Graber, Richard R., Jean W. Graber, and Ethelyn L. Kirk. ILLINOIS BIRDS: MIMIDAE. *Ill. Natur. Hist. Surv. Biol. Notes* no. 68. 38 p., 29 figs. Sept. 1970. *WR 145: 65*

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Gutierrez, R. BIRDS OF THE UPPER SAND CREEK DRAINAGE, SANGRE DE CRISTO MOUNTAINS, COLORADO. *Colo. Field Ornithol.* 8: 11-16. 1970. [From Auk 88(4), 1971.] *WR 145: 65*

Haneda, Kenzo, Toru Nakamura, and Hiroshi Mitsuishi. [ECOLOGICAL STUDY OF THE BIRD COMMUNITY IN OTANOMOSU PLATEAU, SHIGA: IV.] *Bull. Inst. Natur. Educ. Shiga Heights* 9. p. 1-11, illus. 1970. [From Biol. Abstr. 53(1), 1972. In Japanese with English summ.] *WR 145: 65*
[Shinshu Univ., Matsumoto, Japan.] Fourth of a series of observations made during four years. The dominant species are *Parus ater, Regulus regulus, Phylloscopus borealis* and *Erithacus cyanurus.*

Heigham, J. B. BIRDS OBSERVED ON VICTORIA ISLAND, LAGOS. *Nigerian Ornithol. Soc. Bull.* 6: 109-119. 1969. [From Auk 88(4), 1971.] *WR 145: 65*
Frequency occurrence of 147 spp. graphed.

Jackson, R. W. BIRDS IN EXOTIC FORESTS IN NEW ZEALAND. *New Zealand J. Forest.* 16(1): 61-68. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 65*
[Forest Res. Inst., Rotorua, New Zealand.]

James, Frances C. ORDINATIONS OF HABITAT RELATIONSHIPS AMONG BREEDING BIRDS. *Wilson Bull.* 83(3): 215-236, 9 figs. Sept. 1971. *WR 145: 65*
[Univ. Ark. Mus., Fayetteville.] Fifteen variables in the structure of the vegetation are considered in relation to the distribution of 46 spp. on their breeding territories.--Courtesy/ Paul A. Stewart.

Kato, Chuichi. [A STUDY ON AVIFAUNA AT MT. IIDE IN BANDAI-ASAHI NATIONAL PARK.] *Tori Bull. Ornithol. Soc. Japan* 20(88): 1-17, illus. 1970. [From Biol. Abstr. 53(2), 1972. In Japanese with English summ.] *WR 145: 65*

Keast, A. ADAPTIVE EVOLUTION AND SHIFTS IN NICHE OCCUPATION IN ISLAND BIRDS. *Biotropica* 2: 61-75. 1970. [From Auk 89(1), 1972.] *WR 146: 66*

Korsak, Włodzimierz. NOTATKI ORNITOLOGICZNE Z ZIEM ZACHODNICH. [ORNITHOLOGICAL RECORDS FROM THE WESTERN PART OF POLAND.] *Chrońmy Przyrodę Ojczystą* 24 (2): 37-41, 3 figs. Mar.-Apr. 1968. In Polish. *WR 145: 66*

Kučera, Ladislav. DIE VÖGEL DES MITTLEREN BÖHMERWALDES (ŠUMAVA). [THE BIRDS OF THE MIDDLE BOHEMIAN FORESTS (ŠUMAVA).] *Ornithol. Mitteil.* 22(11): 223-242, illus. Nov. 1970. In German. *WR 145: 66*
[Susice, Czechoslovakia.] Annotated list of 131 spp.

Lack, D. ISLAND BIRDS. *Biotropica* 2: 29-31. 1970. [From Auk 89(1), 1972.] *WR 146: 66*

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Supplements the annual Powdermill bird-banding report for 1970.

Marsh, T. G. A HISTORY OF THE FIRST RECORDS OF ALL THE BIRDS REPORTED TO HAVE BEEN SEEN WITHIN THE PRESENT BOUNDARIES OF THE STATE OF COLORADO PRIOR TO SETTLEMENT. *Colo. Field Ornithol.* 3: 12-21. 1968. [From Auk 88(4), 1971.] *WR 146: 66*

Maze, R. L. A PRELIMINARY STUDY OF THE GUINEA SAVANNA AVIFAUNA AT THE MOLE GAME RESERVE IN GHANA. *Ghana J. Sci.* 10(1): 38-48. 1970. [From Biol. Abstr. 53(2), 1972.] *WR 146: 66*
[N. Mex. State Univ., Las Cruces.] Observations of 125 spp.

Mitsuishi, Hiroshi. [ECOLOGICAL STUDY OF THE BIRD COMMUNITY IN OKUSUSOBANA NATURAL GARDEN, NAGANO PREFECTURE.] *Bull. Inst. Natur. Educ. Shiga Heights* 9. p. 13-22, illus. 1970. [From Biol. Abstr. 53(1), 1972. In Japanese with English summ.] *WR 146: 66*
[Shinshu Univ., Matsumoto, Japan.] The breeding bird census was carried out by the method of territory mapping on a belt-shaped plot, 2986 m long, in 1969 and 1970. There were 41 spp. belonging to 21 families observed. The total density was 928.2 birds/km^2 in 1970. The most abundant species was *Parus major* (100.4 birds/km^2), followed by *Muscicapa narcissina* (91.0), and *Erithacus cyane* (82.4). The total biomass was about 41 kg/km^2 in 1970, much lower than that of a similar forest at Chichibu-Tama National Park in central Japan.

Moriarty, T. K. BIRDS OF WANJARRI, WA (27°25'S, 120°40'E). *Emu* 72(1): 1-7, 2 figs. Jan. 1972. *WR 146: 66*
[Wanjarri Sta., Kathleen Valley, Western Australia.] A systematic account of the birds observed on Wanjarri Station since 1940 is given.--From abstr.

Panfil, Jan. O PTAKACH REZERWATU JEZIORA ŁUKNAJNO I JEGO NADBRZEŻY. [THE BIRDS OF LAKE ŁUKNAJNO NATURE RESERVE.] *Chrońmy Przyrodę Ojczystą* 27(3): 13-28, 4 figs. May-June 1971. In Polish with English summ. *WR 145: 66*

Papadopol, Aurel, and Constantin Mîndru. CONTRIBUTII LA CUNOASTEREA PĂSĂRILOR (AVES) DIN REGIUNEA IASI (PARTEA I). [CONTRIBUTIONS TO THE KNOWLEDGE OF BIRDS (AVES) IN THE REGION OF JAŞY (PART I).] *Comun. Zool.* 4: 89-126, illus. 1966. [From Biol. Abstr. 53(2), 1972. In Romanian with Russian and English summ.] *WR 145: 66*
Annotated list of birds of the region. About 60% of the birds of Romania are represented.

Plucinski, Alfons. VOGELBEOBACHTUNGEN AUF DER INSEL RUNDÖY IN SÜD-NORWEGEN. [BIRD OBSERVATIONS ON RUNDÖY ISLAND IN SOUTHERN NORWAY.] *Ornithol. Mitteil.* 23 (2): 25-32, illus. Feb. 1971. In German. *WR 145: 66*
[Breslauer Strasse 2, Goslar, Germany.]

Richardson, Frank. BIRDS OF GRANT BAY AND BROWNING INLET, NORTHWEST VANCOUVER ISLAND, BRITISH COLUMBIA; A YEAR'S PHENOLOGY. *Murrelet* 52(3): 29-40, 3 figs. Sept.-Dec. 1971. *WR 145: 67*
[Univ. Wash., Seattle.] The birds of a coastal bay, beach, rocks, forest, and tidal inlet about 25 miles southeast of the northwest tip of Vancouver Island were observed from July 15, 1968 to July 18, 1969 except from December 14 to January 4. Some 133 spp. of birds were observed in the study area plus 11 additional spp. three to five miles to the east. Of the 133 study area spp. 21 were judged to be primarily permanent residents, 38 migrants, 18 summer residents, and 23 winter residents.--From summ.

Ripley, S. Dillon, and Gorman M. Bond. SYSTEMATIC NOTES ON A COLLECTION OF BIRDS FROM KENYA. *Smithsonian Contrib. Zool.* no. 111. 21 p. 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 145: 67*
Annotated lists.

Tanis, J. J. C. DE OMGEVING VAN DE COSTA DEL SOL ALS MILIEU VOOR VOGELS. [THE ENVIRONS OF COSTA DEL SOL (S. SPAIN) AS AN AREA FOR BIRDS.] *Levende Natuur* 71: 170-174, 2 figs. 1968. In Dutch. *WR 145: 67*
Tabulation of abundance for 11 defined biotopes.

Wells, D., and F. Walsh. BIRDS OF NORTHERN AND CENTRAL BORGU (IN THREE PARTS). *Nigerian Ornithol. Soc. Bull.* 6: 1-25, 63-77, 78-93. 1969. [From Auk 88(4), 1971.] *WR 145: 67*

Westernhagen, W. von. ÜBER DIE BRUTVÖGEL DER BANC D'ARGUIN (MAURETANIEN). [ON THE BREEDING BIRDS OF BANC D'ARGUIN (MAURETANIA).] *J. Ornithol.* 111: 206-225. 1970. [From Auk 89(1), 1972. In German with English summ.] *WR 145: 67*
Includes notes on changes in bird populations since earlier reports.

Winterbottom, J. M., editor. CHECKLIST OF THE BIRDS OF SOUTH AFRICA. *South African Ornithol. Soc., List Committee.* 338 p. 1969. [From Auk 88(4), 1971.] *WR 145: 67*

Wodzicki, Kazimierz, and Marshall Laird. BIRDS AND BIRD LORE IN THE TOKELAU ISLANDS. *Notornis* 17(4): 247-276, 3 figs. + 34 pls. Dec. 1970. *WR 145: 67*
[Dep. Sci. & Industrial Res., Wellington, New Zealand.]

Woike, Martin. ZUM VORKOMMEN EINIGER VOGELARTEN IN DER NÖRDLICHEN ALPENZONE. [ON THE OCCURRENCE OF SOME BIRD SPECIES IN THE NORTHERN ALPINE ZONE.] *Ornithol. Mitteil.* 22(10): 201-202. Oct. 1970. In German. *WR 145: 67*
"Podiceps cristatus, P. nigricollis, Fulica atra, Turdus torquatus alpestris, Montifringilla nivalis, Pyrrhocorax graculus, and *Corvus corone corone."*

Won, Pyong-Oh. [BIRD SURVEY IN CHUJA ISLAND, CHEJU-DO, KOREA.] *Tori Bull. Ornithol. Soc. Japan* 20(88): 18-23, illus. 1970. [From Biol. Abstr. 53(1), 1972. In Japanese with English summ.] *WR 145: 67*
[Kyung Hee Univ., Seoul, Korea.]

BIRDS--POPULATIONS & FLUCTUATIONS

Boer, P. VOGELTELLINGEN OP DE NOORDZEE IN AUGUSTUS 1970. [COUNTS OF BIRDS ON NORTH SEA IN AUGUST 1970.] *Limosa* 44(1/2): 23-28. 1971. [From Biol. Abstr. 53(2), 1972. In Dutch with English summ.] *WR 145: 67*
[Tj. Visserweg 39, Bergen, Netherlands.]

Huckriede, B. ZUR TANNENHÄHER-INVASION 1954 IN DEUTSCHLAND. [ON THE 1954 INVASION INTO GERMANY OF THE NUTCRACKER *(NUCIFRAGA CARYOCATACTES).*] *Vogelwarte* 25: 23-25. 1969. [From Auk 88(4), 1971. In German.] *WR 145: 67*

BIRDS--POPULATIONS & FLUCTUATIONS--Continued

Johansson, H. [BREEDING BIRD CENSUS IN A PLANTED SEASHORE FOREST AND AN ELM FOREST IN SOUTHERN SWEDEN.] *Vår Fågelvärld* 30: 23-28. 1971. [From Auk 89(1), 1972. In Swedish with English summ.] *WR 145: 68*

Kikkawa, J., and K. Pearse. GEOGRAPHICAL DISTRIBUTION OF LAND BIRDS IN AUSTRALIA--A NUMERICAL ANALYSIS. *Australian J. Zool.* 17: 821-840. 1969. [From Auk 88(4), 1971.] *WR 145: 68*

Lyster, Ian H. J. WAXWINGS IN SCOTLAND, 1970/71. *Scottish Birds* 6(8): 420-438, 3 figs. Winter 1971. *WR 145: 68*
The arrival of large numbers of waxwings in East Lothian in October 1970 heralded a major invasion. More than 500 separate observations were received, concerning more than 5000 birds. Details are given of the arrival and dispersal of these birds in Scotland.--From summ.

Persson, B. [A SURVEY OF THE BREEDING BIRD POPULATIONS IN AN OPEN FORMERLY AGRICULTURAL LANDSCAPE, SOUTHERN SWEDEN.] *Vår Fågelvärld* 30: 19-22. 1971. [From Auk 89(1), 1972. In Swedish with English summ.] *WR 145: 68*

Speek, B. J. DE INVASIE VAN NOTENKRAKERS *NUCIFRAGA CARYOCATACTES* IN NEDERLAND IN HET JAAR 1968. [INVASION OF NUTCRACKERS *NUCIFRAGA CARYOCATACTES* IN THE NETHERLANDS IN 1968.] *Limosa* 44(1/2): 11-18, illus. 1971. [From Biol. Abstr. 53(2), 1972. In Dutch with English summ.] *WR 145: 68*
[Inst. Oecol. Onderz., Arnhem, Netherlands.]

Svensson, S. [ON BREEDING BIRD CENSUSES AND SURVEYS.] *Vår Fågelvärld* 30: 6-14. 1971. [From Auk 89(1), 1972. In Swedish with English summ.] *WR 145: 68*

Tekke, M. J. ERUPTIE VAN APPELVINKEN *COCCOTHRAUSTES COCCOTHRAUSTES* IN 1969 EN 1970. [IRRUPTION OF HAWFINCHES *COCCOTHRAUSTES COCCOTHRAUSTES* IN 1969 AND 1970.] *Limosa* 44(1/2): 19-22. 1971. [From Biol. Abstr. 53(2), 1972. In Dutch with English summ.] *WR 145: 68*
[Harderwijkstraat 136, Den Haag, Netherlands.]

Thompson, Charles Frederick. DEMOGRAPHIC CHARACTERISTICS OF A POPULATION OF YELLOW-BREASTED CHATS, *ICTERIA V. VIRENS* (L.), IN SOUTHERN INDIANA. *Ph.D. thesis, Ind. Univ.* 157 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(9), 1972.] *WR 145: 68*

Winterbottom, J. M. RESULTS OF THE GARDEN BIRD COUNTS ORGANISED BY THE PERCY FITZPATRICK INSTITUTE OF AFRICAN ORNITHOLOGY: PART 1. *Ostrich* suppl. no. 8. p. 449-469. 1970. *WR 145: 68*
[Percy FitzPatrick Inst., Cape Town, South Africa.]

BIRDS--ECONOMICS, CONTROL, MORTALITY

Davidson, George R., Jr., Truett V. Degeare, Jr., Thomas J. Sorg, and Robert M. Clark. LAND DISPOSAL SITES NEAR AIRPORTS REPORTING BIRD/AIRCRAFT HAZARDS. A SURVEY FOR THE INTER-AGENCY BIRD HAZARD COMMITTEE. *U.S. Environ. Protection Agency, Div. Tech. Operations Open-File Rep.* (TSR 1.6.004/0). ii + 33 p. 1971. *WR 145: 68*

Dow, Douglas D. EFFECT OF A CATASTROPHIC HAILSTORM ON BIRD POPULATIONS. *Emu* 72(1): 22-23. Jan. 1972. *WR 145: 68*
[Univ. Queensland, St. Lucia, Queensland, Australia.] "Although catastrophic events as isolated and instantaneous as these have such obviously devastating effects on local bird populations, it is difficult to ascribe to them any far-reaching significance in the ecology or regulation of populations of birds such as Stilts or Noisy Miners in south-eastern Queensland or probably elsewhere."

Flanigan, Annette B. PREDATION ON SNAKES BY EASTERN BLUEBIRD AND BROWN THRASHER. *Wilson Bull.* 83(4): 441. Dec. 1971. *WR 145: 69*
[Smith Rd., Waite Hill, Ohio.] A bluebird *(Sialia sialis)* ate a snake about eight inches long, and a brown thrasher *(Toxostoma rufum)* ate one about twelve inches long.--Courtesy/ Paul A. Stewart.

Keil, Werner. UNTERSUCHUNGEN ZUR ERNÄHRUNG VON HAUS- UND FELDSPERLING - *PASSER DOMESTICUS* UND *P. MONTANUS* - IN EINEM GETREIDEANBAUGEBIET IM WINTERHALBJAHR. [INVESTIGATIONS UPON THE FEEDING HABITS OF THE HOUSE SPARROW *(PASSER DOMESTICUS)* AND THE TREE SPARROW *(P. MONTANUS)* IN A CEREAL-GROWING DISTRICT DURING WINTER.] *Luscinia* 41(2): 76-87, 8 figs. Dec. 1970. In German with English summ. *WR 145: 69*
[Steinaure Strasse 44, Frankfurt/M.-Fechenheim, Germany.]

Larsen, Kenneth H. BIRD CONTROL IN ORCHARDS. *Proc. Oreg. Hortic. Soc.* 62. p. 62-68. Jan. 1971. *WR 145: 69*
Control of starlings and house finches to prevent damage to ripe cherries is discussed. Three categories of control mentioned are: frightening or repelling, physical protection, and population reduction.

Manikowski, Stanisław. BADANIA NAD ŚMIERTELNOŚCIA PTAKÓW ZIMUJACYCH NA BAŁTYKU. [STUDIES ON THE MORTALITY OF BIRDS SPENDING THE WINTER ON THE BALTIC SEA.] *Chrońmy Przyrode Ojczystą* 27(4): 32-39, 3 figs. July-Aug. 1971. In Polish with English summ. *WR 145: 69*
On summarizing the results it may be stated that the mean number of dead specimens is 49 per 10 km of sea shore; of these, at least 31 birds perished in consequence of the "oil menace".--From summ.

Marchant, S. DESTRUCTION OF NEST-CONTENTS BY CUCKOOS. *Emu* 72(1): 29-31. Jan. 1972. *WR 145: 69*
[63 Morey Road, Beaumaris, Victoria, Australia.]

Tompa, Frank S. CATASTROPHIC MORTALITY AND ITS POPULATION CONSEQUENCES. *Auk* 88(4): 753-759. Oct. 1971. *WR 145: 69*
[Memorial Univ., St. John's, Newfoundland, Canada.] A late-spring snowstorm eliminated one-third of an insular population of song sparrows *(Melospiza melodia)*, including 34, 36, 24, and 42%, respectively, of adult males, adult females, young males, and young females. The replacement of females was incomplete, with a resulting high number of unmated males on territories.--Courtesy/ Paul A. Stewart.

Walsh, F. VILLAGE WEAVERS CAUSING SEVERE DAMAGE TO MAIZE. *Nigerian Ornithol. Soc. Bull.* 6: 106-107. 1969. [From Auk 88(4), 1971.] *WR 145: 69*
"Plesiositagra (Ploceus) cucullatus."

Zeberl, Horst. WINTERFÜTTERUNG DER VÖGEL UND SCHÄDLICHE FOLGEN. [WINTER FEEDING OF BIRDS AND THE DAMAGING RESULTS.] *Ornithol. Mitteil.* 22(12): 245-248. Dec. 1970. In German. *WR 145: 69*
[Haanenberg 21, Solingen, Germany.]

BIRDS--PARASITES & DISEASES

Amerson, A. B., Jr. TICK DISTRIBUTION IN THE CENTRAL PACIFIC AS INFLUENCED BY SEA BIRD MOVEMENT. *J. Med. Entomol.* 5: 332-339. 1968. [From Auk 88(4), 1971.] *WR 145: 69*

Barus, Vlastimil, and Nerly Lorenzo Hernandez. NEMÁTODES PARÁSITOS DE AVES EN CUBA. PARTE IV. [PARASITIC NEMATODES OF THE BIRDS OF CUBA. PART IV.] *Poeyana* no. 88. 15 p., 4 figs. 13 May 1971. In Spanish with English summ. *WR 145: 69*
[Czechoslovak Acad. Sci., Brno, Czechoslovakia.] Eleven species of nematodes are described as parasites of Cuban birds of the order Charadriiformes (families Charadriidae, Recurvirostridae, Scolopacidae, Laridae, and Rhynchopidae).--From abstr.

Cruz, Jorge de la. NUEVAS ADICIONES A LA ACAROFAUNA PARÁSITA (ACARINA: HYPODERIDAE Y PTILONYSSIDAE) DE LAS AVES DE CUBA. [NEW ADDITIONS TO THE PARASITIC ACAROFAUNA (ACARINA: HYPODERIDAE AND PTILONYSSIDAE) OF THE BIRDS OF CUBA.] *Poeyana* no. 90. 6 p., 2 figs. 26 May 1971. In Spanish with English summ. *WR 145: 70*
[Inst. Biol., Acad. Cienc., Havana, Cuba.]

Gross, W. B., and L. DS. Smith. EXPERIMENTAL BOTULISM IN GALLINACEOUS BIRDS. *Avian Dis.* 15(4): 716-722. Oct.-Dec. 1971. *WR 145: 70*
[Va. Polytech. Inst., Blacksburg.] The relative toxicity was determined of types *A, B, C*-alpha, *C*-beta, *D, E,* and *F Clostridium botulinum* toxin administered orally or intravenously to chickens, turkeys, peafowl, and pheasants.--From summ.

Jasmin, A. M., D. E. Cooperrider, C. P. Powell, and J. N. Baucom. ENTEROTOXEMIA OF WILDFOWL DUE TO *CL. PERFRINGENS* TYPE C. *J. Wildl. Dis.* 8(1): 79-84, 2 figs. Jan. 1972. *WR 145: 70*
[Kissimmee Animal Lab., Kissimmee, Fla.] Abstract: *Clostridium perfringens* Type C has been found as a possible cause of high mortality in waterfowl and wild birds in a 12 hectare (40 acre) area of Lake Okeechobee, Florida.

Khan, R. A., and S. S. Desser. AVIAN LANKESTERELLA INFECTIONS IN ALGONQUIN PARK, ONTARIO. *Canadian J. Zool.* 49(8): 1105-1110, illus. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 70*
[Mem. Univ. Newfoundland, St. Johns, Newfoundland, Canada.]

Locke, Louis N., and Richard C. Banks. AVIAN CHOLERA IN CEDAR WAXWINGS IN OHIO. *J. Wildl. Dis.* 8(1): 106. Jan. 1972. *WR 145: 70*
[Patuxent Wildl. Res. Center, Laurel, Md.] Abstract: Avian cholera *(Pasteurella multocida* infection) was responsible for a localized die-off of cedar waxwings *(Bombycilla cedrorum)* at Steubenville, Ohio in late June, 1968.

Pence, Danny B. THE NASAL MITES OF BIRDS FROM LOUISIANA. I. DERMANYSSIDS (RHINONYSSINAE) FROM SHORE AND MARSH BIRDS. *J. Parasitol.* 58(1): 153-168, 48 figs. Feb. 1972. *WR 145: 70*
[Univ. Mass., Amherst.]

Rosen, Merton N. THE 1970-71 AVIAN CHOLERA EPORNITIC'S IMPACT ON CERTAIN SPECIES. *J. Wildl. Dis.* 8(1): 75-78. Jan. 1972. *WR 145: 70*
[Calif. Dep. Fish & Game, Sacramento.] Abstract: The 1970-71 avian cholera epornitic was the third highest in waterfowl mortalities during the 22 annual California recurrences for which we have records. The most serious aspect of this outbreak was its impact on species which, although not classified as rare and endangered, nonetheless are in low numbers. For example, 7.3 percent of the Ross goose *(Chen rossii)*, and 3.9 percent of the whistling swan *(Olor columbianus)* populations wintering in California died of avian cholera as well as ten sandhill cranes *(Grus canadensis)* and one bald eagle *(Haliaeetus leucocephalus)*. A possible cause of the large losses of waterfowl was a late winter drought with resultant local high concentrations of birds and heavy contamination of the water.

Schmidt, Gerald D., and Robert E. Kuntz. NEMATODE PARASITES OF OCEANICA. XVI. *CORDONEMA VENUSTA* GEN. ET. SP.NOV., AND *SKRJABINOCLAVA* SPP. (ACUARIIDAE: ECHINURIINAE), FROM BIRDS. *Parasitology* 64(2): 235-244, 17 figs. Apr. 1972. *WR 145: 70*
[Univ. Northern Colo., Greeley.]

Schmidt, Gerald D., and Robert E. Kuntz. NEMATODE PARASITES OF OCEANICA. XVII. SCHISTOROPHIDAE, SPIRURIDAE, PHYSALOPTERIDAE AND TRICHOSTRONGYLIDAE OF BIRDS. *Parasitology* 64(2): 269-278, 20 figs. Apr. 1972. *WR 145: 70*
[Univ. Northern Colo., Greeley.]

Stone, Ward B., Bruce L. Weber, and Frances J. Parks. MORBIDITY AND MORTALITY OF BIRDS DUE TO AVIAN MALARIA. *N.Y. Fish & Game J.* 18(1): 62-63. Jan. 1971. *WR 145: 71*
[N.Y. State Dep. Environ. Conserv., Albany.]

GAME BIRDS--GENERAL

Benson, Denis A. REPORT ON SALES OF THE CANADA MIGRATORY GAME BIRD HUNTING PERMIT AND WATERFOWL HARVEST AND HUNTER ACTIVITY, 1970. *Canadian Wildl. Serv. Prog. Notes* no. 22. 29 p. Aug. 1971. In English and in French. *WR 145: 71*
[Canadian Wildl. Serv., Ottawa, Canada.]

Game Conservancy. ANNUAL REVIEW FOR 1970. *Game Conservancy* (Fordingbridge, Hampshire, England). 103 p., illus. 1971. *WR 145: 71*
Continuing studies on gamebirds.

Sterbetz, István. VÁLSÁGOS JELENSÉGEK NÉHÁNY HAZAI SZÁRNYASVAD-POPULÁCIÓ DINAMIZMUSÁBAN. [CRISES IN THE DYNAMICS OF INDIVIDUAL POPULATIONS OF GAME BIRDS IN HUNGARY.] *Állattani Kozl* 58(1-4): 124-129, illus. 1971. [From Biol. Abstr. 53(2), 1972. In Hungarian with German summ.] *WR 145: 71*
[Madártani Intez., Budapest, Hungary.] The populations of the little bustard *(Otis tetrax)*, the great bustard *(O. tarda)*, the quail *(Coturnix coturnix)*, the woodcock *(Scolopax rusticola)* and the partridge *(Perdix perdix)* have appreciably declined in Hungary. The role of hunting in this population reduction is discussed. It is recommended that the great bustard be placed under total protection and that the hunting period of the woodcock be limited to 6 weeks.

QUAIL

Davis, R. B. SURVIVAL OF HATCHERY RAISED BOBWHITE QUAIL. *Tex. Parks & Wildl. Dep., Tech. Ser.* no. 4. 10 p. 1970. *WR 145: 71*
In areas depleted of native quail, where hatchery bobwhite quail are used to provide hunting, the prospects are poor and the costs are certain to be high.

Dawson, L. E., L. R. York, N. Amon, C. Kulenkamp, and T. H. Coleman. COMPOSITION AND ACCEPTABILITY OF MEAT FROM BOBWHITE QUAIL. *Poultry Sci.* 50(6): 1805-1810, 3 figs. Nov. 1971. *WR 145: 71*
[Mich. State Univ., East Lansing.] Battery-reared male and female bobwhite quail were processed at 10, 12, 14, 16 and 18 weeks of age. Meat yields were determined for oven cooked birds, and proximate analyses for composition of meat from raw and cooked samples.--From summ.

Kellogg, Forest E., and Janet P. Calpin. A CHECKLIST OF PARASITES AND DISEASES REPORTED FROM THE BOBWHITE QUAIL. *Avian Dis.* 15(4): 704-715. Oct.-Dec. 1971. *WR 145: 71*
[Univ. Ga., Athens.] Summary: A checklist of diseases and parasites reported from the bobwhite quail *(Colinus virginianus)* is presented. Included are: 4 viral, 15 bacterial, and 2 mycotic diseases; 12 protozoan, 1 trematode, 13 cestode, 3 acanthocephalan, 30 nematode, and 39 arthropod parasites. One hundred and thirty-four references are cited.

Watts, Douglas M., and James E. Williams. EXPERIMENTAL INFECTION OF BOBWHITE QUAIL *(COLINUS VIRGINIANUS)* WITH WESTERN EQUINE ENCEPHALITIS (WEE) VIRUS. *J. Wildl. Dis.* 8(1): 44-48. Jan. 1972. *WR 145: 71*
[Univ. Wis., Madison.]

Barrett, Morley W., and Edward D. Bailey. INFLUENCE OF METABOLIZABLE ENERGY ON CONDITION AND REPRODUCTION OF PHEASANTS. *J. Wildl. Mgmt.* 36(1): 12-23, 4 figs. Jan. 1972. *WR 145: 72*

[Alberta Dep. Lands & Forests, Lethbridge, Alberta, Canada.] Abstract: From December 4, 1967, to May 29, 1968, ring-necked pheasants *(Phasianus colchicus)* housed in outdoor pens near Guelph, Ontario, were monitored to determine the effects of varying energy content in feed on live body weight, carcass composition, and reproduction. Three groups, of 26 birds each, were fed diets differing in metabolizable energy (ME). ME content of high, medium, and low energy diets throughout most of the experiment was 2.93, 2.41, and 2.06 kcal/gram, respectively. Pheasants on the diets with low and medium ME ingested the most food in an apparent attempt to compensate for the reduced caloric content in their diets. Principal effects of reduced dietary ME level were (1) reduction in body weights, (2) poorer physical condition, (3) delayed onset of egg-laying, and (4) increased hatchability of eggs. Analysis of carcasses of 92 birds from our studies, from birds collected in various parts of southwestern Ontario, and from birds on a starvation trial showed that females had considerably larger portions of their carcasses composed of fat than males and that the fat, protein, and water content of pheasant carcasses decreased concomitantly as the physical condition of the birds deteriorated.

Burger, George V., and Richard C. Oldenburg. USING PHEASANT BAND RECOVERIES TO EVALUATE HABITAT ON SHOOTING PRESERVES. *J. Wildl. Mgmt.* 36(1): 146-149. Jan. 1972. *WR 145: 72*

[Max McGraw Wildl. Foundation, Dundee, Ill.] Abstract: Band recoveries from 4,376 pheasants *(Phasianus colchicus)*, banded and released over three hunting seasons on a put-and-take shooting preserve, were used to test the effectiveness of habitat management designed to increase harvest rates on seven hunting units. Recoveries were lowest where annual plantings failed to yield adequate food and cover because of low soil fertility, where perennial cover was sparse or deteriorating, or where cover bordering the hunting unit was adequate to attract and hold birds. Recoveries were highest where good soil fertility and adequate perennial plantings existed and were maintained regularly by management practices.

Helmboldt, C. F., and D. S. Wyand. PARASITIC NEOPLASIA IN THE GOLDEN PHEASANT. *J. Wildl. Dis.* 8(1): 3-6, 3 figs. Jan. 1972. *WR 145: 72*

[Univ. Conn., Storrs.] Abstract: A neoplastic process considered to be a leiomyoma was seen in the cecal wall of three golden pheasants *(Chrysolophus pictus)*. In each neoplasm, remnants of *Heterakis* sp. were present. This parasite caused inflammation which developed into the tumor. The reaction was unusual as Aves ordinarily react to focal intestinal insult by granuloma formation.

Joselyn, G. Blair, and G. I. Tate. PRACTICAL ASPECTS OF MANAGING ROADSIDE COVER FOR NESTING PHEASANTS. *J. Wildl. Mgmt.* 36(1): 1-11, 3 figs. Jan. 1972. *WR 145: 72*

[Ill. Natur. Hist. Surv., Urbana.] Abstract: A study to determine the feasibility of managing roadsides for nesting ring-necked pheasants *(Phasianus colchicus)* in the intensively farmed cash-grain region of east-central Illinois has been under way since 1962. Data for 6 years showed that the number of pheasants hatched on roadsides was substantially increased by the seeding of a grass-legume mixture in place of old bluegrass *(Poa* spp.) sods and annual weeds. To evaluate cost and acceptance of such seedings as a practical tool for providing pheasant nesting cover over a large area, roadsides within, or abutting on, a 16-square-mile area (equivalent to 20 square miles) were seeded to bromegrass *(Bromus* spp.) and alfalfa *(Medicago sativa)* during August and September 1968. Of the 65 farm operators residing in the management unit, 61 (94 percent) participated in the program. This participation included an agreement on the part of the farmers to delay mowing of their roadsides each year until July 31. Total cost of the project was calculated at $10,124, or $139 per mile for one side of the road. Amortized over a 10-year life expectancy of the seedings, the cost per acre per

year would be about $7.00 but could be reduced by as much as 50 percent by modifying the seeding operations. Dry weather delayed maturity of the seedings until 1970; during that year less than 10 percent of the roadsides had been mowed by July 31, as compared with 97 percent by that date in 1967.

Lund, Everett E., and Anne M. Chute. THE RING-NECKED PHEASANT *(PHASIANUS COLCHICUS TORQUATUS)* AS A HOST FOR *HETERAKIS GALLINARUM* AND *HISTOMONAS MELEAGRIDIS*. *Amer. Midland Natur.* 87(1): 1-7. Jan. 1972. *WR 145: 73*
[Agr. Res. Serv., Beltsville, Md.] Abstract: Experimental infections with *Histomonas meleagridis* and *Heterakis gallinarum* were established in ring-necked pheasants via rectal inoculation with *Histomonas*, oral inoculation with *Histomonas*-bearing *Heterakis* eggs, and oral inoculation with earthworms carrying both parasites. Chickens and turkeys were similarly inoculated for comparison. The pheasants supported *Histomonas* infections with little or no liver involvement and mortality. *Heterakis* thrived, producing large numbers of viable eggs. These findings suggest that the pheasant can be an important source of contamination of soil with *Histomonas*-bearing *Heterakis* eggs.

TURKEY

Byrd, Elon E., and Forest E. Kellogg. *RENICOLA HAYESANNIEAE*, A NEW KIDNEY FLUKE (DIGENEA: RENICOLIDAE) FROM THE WILD TURKEY, *MELEAGRIS GALLOPAVO SILVESTRIS* VIEILLOT, FROM MISSISSIPPI. *J. Parasitol.* 58(1): 99-103, 8 figs. Feb. 1972. *WR 145: 73*
[Univ. Ga., Athens.] A new trematode, *Renicola hayesanniae*, is reported from the kidney of 7 of 30 wild turkey, *Meleagris gallopavo silvestris*, from Tunica County, Mississippi.--From abstr.

Williams, Lovett E., Jr. A PALE MUTANT WILD TURKEY IN JUVENAL PLUMAGE. *Quart. J. Fla. Acad. Sci.* 32(3): 236-238, 1 fig. Sept. 1969. *WR 145: 73*
[Fla. Game & Fresh Water Fish Comm., Gainesville.] *"Meleagris gallopavo."*

Williams, Lovett E., Jr. A LIVING WILD TURKEY WITH A FEATHERED HEAD. *Auk* 89(1): 193-194, 1 fig. Jan. 1972. *WR 145: 73*
[Fla. Game & Fresh Water Fish Comm., Gainesville.] *"Meleagris gallopavo."*--Courtesy/ Paul A. Stewart.

GROUSE, PARTRIDGE, ETC.

Bergerud, Arthur T. CHANGES IN THE VULNERABILITY OF PTARMIGAN TO HUNTING IN NEWFOUNDLAND. *J. Wildl. Mgmt.* 36(1): 104-109, 1 fig. Jan. 1972. *WR 145: 73*
[Univ. Victoria, Victoria, British Columbia, Canada.] Abstract: The percentage of willow ptarmigan *(Lagopus lagopus)* harvested in Newfoundland varied in 10 years, 1955 to 1964, from 5 to 40 percent. The annual changes in exploitation were not correlated with bird densities, hunting pressures, hunting success, hatching chronology, or days of precipitation during the hunting season. The percentage of harvest was correlated with the number of young raised per hen (r=-0.753). Also, two indices to the vulnerability of the population each year to hunting were correlated with the ratio of young per hen. It is suggested that the vulnerability of ptarmigan varies among years and has a basis in the annual changes in the intrinsic viability of the annual cohorts.

Braun, C. E., and G. E. Rogers. ECOLOGY OF THE WHITE-TAILED PTARMIGAN IN COLORADO: A PRELIMINARY REPORT. *Colo. Field Ornithol.* 2: 6-9. 1967. [From Auk 88(4), 1971.] *WR 145: 73*
"Lagopus leucurus."

Dick, T. A., and M. D. B. Burt. THE LIFE CYCLE AND SEASONAL VARIATION OF *DAVAINEA TETRAOENSIS* FUHRMANN 1919, A CESTODE PARASITE OF RUFFED GROUSE, *BONASA UMBELLUS* (L.). *Canadian J. Zool.* 49: 109-119. 1971. [From Auk 89(1), 1972.] *WR 145: 73*

Eng, Robert L., and Philip Schladweiler. SAGE GROUSE WINTER MOVEMENTS AND HABITAT USE IN CENTRAL MONTANA. *J. Wildl. Mgmt.* 36(1): 141-146, 1 fig. Jan. 1972. *WR 145: 74*

[Mont. State Univ., Bozeman.] Abstract: Movements and habitat use by sage grouse *(Centrocercus urophasianus)* were studied in central Montana during the winters of 1965-66 and 1966-67. Two and three female grouse were radio-equipped and tracked during the two respective winters. Winter ranges of the five instrumented females ranged from approximately 2,615 to 7,760 acres. A 4-square-mile primary study area, containing over half of the relocations of the five instrumented birds, was separated into two big sagebrush *(Artemisia tridentata)* canopy cover classes on 16-inch:1-mile aerial photographs. Fifty-five percent of the primary study area was in the more dense (over 20 percent canopy coverage) and 45 percent in the less dense (under 20 percent canopy coverage) category. Observed use of the two canopy coverage classes was significantly *(P*<0.01*)* different, a decided preference for the more dense stands being indicated. The characteristics of central Montana sage grouse winter areas (large expanses of dense sagebrush with little if any slope) make them prime targets of sagebrush control programs. Removal of sagebrush from these areas would greatly reduce their capacity to support wintering sage grouse.

Gullion, Gordon W. THE RUFFED GROUSE IN NORTHERN MINNESOTA. *Univ. Minn.* 37 p., 16 figs. 16 Apr. 1970. Copies available from Cloquet Forest Res. Center, Cloquet, Minn. *WR 145: 74*

[Cloquet Forest Res. Center, Cloquet, Minn.] *"Bonasa umbellus."*

Gurchinoff, Steve, and William L. Robinson. CHEMICAL CHARACTERISTICS OF JACKPINE NEEDLES SELECTED BY FEEDING SPRUCE GROUSE. *J. Wildl. Mgmt.* 36(1): 80-87. Jan. 1972. *WR 145: 74*

[Univ. Wyo., Laramie.] Abstract: A study was conducted in northern Michigan to determine whether detectable chemical or environmental differences exist between individual jackpine *(Pinus banksiana)* trees selected by the spruce grouse *(Canachites canadensis)* for winter feeding and those that are not selected by the grouse. Chemical analysis of needles from 10 browsed and 10 unbrowsed trees showed that (1) moisture content between the two groups was similar (54.8 percent versus 53.7 percent), (2) protein content was significantly higher in the browsed trees (8.9 percent versus 8.5 percent), (3) ether extract or crude fat was significantly lower in the browsed trees (11.8 percent versus 13.0 percent), (4) ash content was significantly higher in the browsed trees (2.5 percent versus 1.9 percent), and (5) total carbohydrate content of the two groups of trees was similar (77.0 percent versus 76.6 percent). Habitat analysis showed that the trees being selected by the grouse were significantly older (average age 36.3 years) than the trees not being selected (average age 33.5 years), but the difference in age is not believed to be important in itself. The higher protein and ash content may be the reason that spruce grouse select needles from certain individual jackpines for their winter food.

Moss, Robert. EFFECTS OF CAPTIVITY ON GUT LENGTHS IN RED GROUSE. *J. Wildl. Mgmt.* 36(1): 99-104. Jan. 1972. *WR 145: 74*

[Nature Conservancy, Banchory, Kincardinshire, Scotland.] Abstract: Lengths of caeca and small intestines in captive red grouse *(Lagopus lagopus scotious)* are documented. The birds, originally derived from wild stock, were kept on an artificial diet with a small supplement of their natural food of heather *(Calluna vulgaris)*. Both parts of the gut decreased in length, the caeca more than the small intestines. These decreases continued over several generations in captivity until the caeca were 52 percent and the small intestines 72 percent of the lengths found in the wild. The small intestines had stopped decreasing at this point, but the caeca might have decreased further if the experiment had continued. It is inferred that the short gut lengths were caused by the change in diet. It is suggested that length of gut may be used as an index to the type of food eaten by wild birds.

Muehrcke, John P., and Charles M. Kirkpatrick. OBSERVATIONS ON ECOLOGY AND BEHAVIOR OF INDIANA RUFFED GROUSE. *Proc. Ind. Acad. Sci. 1969*, 79: 177-186, 1 fig. 1970. *WR 145: 75*
[Purdue Univ., Lafayette, Ind.]

Picozzi, N. BREEDING PERFORMANCE AND SHOOTING BAGS OF RED GROUSE *(LAGOPUS LAGOPUS SCOTICUS)* IN RELATION TO PUBLIC ACCESS IN THE PEAK DISTRICT NATIONAL PARK, ENGLAND. *Biol. Conserv.* 3(3): 211-215, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 75*
[Nature Conservancy, Banchory, Scotland.]

Poley, B. E. SEASONAL MOVEMENTS OF SAGE GROUSE IN COLORADO. *Field Ornithol.* 5: 1-4. 1969. [From Auk 88(4), 1971.] *WR 145: 75*
"Centrocercus urophasianus."

Robel, Robert J., F. Robert Henderson, and Warren Jackson. SOME SHARP-TAILED GROUSE POPULATION STATISTICS FROM SOUTH DAKOTA. *J. Wildl. Mgmt.* 36(1): 87-98, 1 fig. Jan. 1972. *WR 145: 75*
[Kans. State Univ., Manhattan.] Abstract: A total of 5,680 sharp-tailed grouse *(Pediocoetes phasinellus)* were trapped, banded, and released on the Kadoka Area (2,100 square miles) and 1,605 on the Missouri River Area (750 square miles) of South Dakota during the winters of 1963 through 1968. Winter population estimates of grouse on the Kadoka Area varied between 0.7 and 1.8 birds per square mile and between 0.9 and 1.8 per square mile on the Missouri River Area. The population estimate for the Missouri River Area was probably low due to low trapping effort on that area. A significant difference *($P<0.01$)* existed between juvenile:adult ratios of hunter-killed birds and those trapped during the initial month of trapping on both areas. A reduction in the juvenile:adult ratio of trapped birds on the Kadoka Area between December (3.50) and January-March (1.94) was significant *($P<0.01$)* as was that for the Missouri River Area between January (6.36) and February-March (2.68). These differences in age ratios probably reflected differential trap vulnerability of juveniles and adults early in the trapping periods. Annual mortality determined from recapture of marked birds was 71.5 and 70.4 percent for the Kadoka and Missouri River areas, respectively. Annual mortality based on returns of hunter-killed birds was 79.5 and 70.6 percent for the Kadoka and Missouri River areas, respectively. Hunters harvested a minimum of approximately 20 to 25 percent of the birds on the Missouri River and Kadoka areas each year.

Watson, Adam. THE BEHAVIOUR OF THE PTARMIGAN. [Part 1.] *British Birds* 65 (1): 6-26, 7 figs. + 5 pls. Jan. 1972. *WR 145: 75*
An exploratory descriptive account which classifies observations of the behavior of the ptarmigan *Lagopus mutus*, especially postures and calls. Most observations were of Scottish ptarmigan *L. m. millaisi*, but some were of other races in Scandinavia *(mutus)*, Iceland *(islandorum)*, Alaska *(Townsendi* and possibly *rupestris)* and Baffin Island (also *rupestris*). No racial differences were noted in postures and calls.--From intro.

DOVES & PIGEONS

Brown, Richard Lynn. THE EXTENT OF BREEDING BY IMMATURE MOURNING DOVES, *(ZENAIDURA MACROURA MARGINELLA)*, IN SOUTHERN ARIZONA. *M.S. thesis, Univ. Ariz.* ix + 56 p., 16 figs. 1967. *WR 145: 75*
Courtesy/ Henry M. Reeves.

Budgell, Philip. BEHAVIOURAL THERMOREGULATION IN THE BARBARY DOVE *(STREPTOPELIA RISORIA)*. *Anim. Behav.* 19(3): 524-531, 10 figs. Aug. 1971. *WR 145: 75*
[Dep. Exp. Psychol., South Parks Rd., Oxford, England.] Abstract: Barbary doves were trained to influence environmental temperature by pecking in a Skinner

box. It was found that these birds would work to increase environmental temperature, when the temperature fell below a certain value. Analysis of the thermoregulatory behaviour by means of frequency analysis suggests that the behaviour is controlled by brain temperature, and acts in a simple feedback loop containing an on-off threshold.

Downing, Robert L. AN EVALUATION OF GROUND NESTING BY MOURNING DOVES IN NORTHWESTERN OKLAHOMA. *M.S. thesis, Okla. State Univ.* v + 35 p., 1 fig. Aug. 1952. *WR 145: 76*
Courtesy/ Henry M. Reeves.

Frith, H. J. NESTING OF THE BLACK-BANDED PIGEON AND THE AUSTRALIAN ROCK PIGEONS. *Emu* 72(1): 13-16 + 3 pls. Jan. 1972. *WR 145: 76*
[CSIRO, P.O. Box 84, Lyneham, Australian Capital Territory, Australia.] Abstract: The nest and egg of the Black-banded Pigeon *Ptilinopus cinctus alligator* and those of the Chestnut-quilled Rock Pigeon *Petrophassa rufipennis* are described for the first time. The first description of the juvenile plumage of the Black-banded Pigeon is provided. Two nests of the White-quilled Rock Pigeon *P. albipennis* are also described, because authenticated nests of this species are not commonly reported. The breeding habitat of the three species is described.

Goforth, W. Reid. SOCIAL ORGANIZATION AND TERRITORIES OF PENNED MOURNING DOVES *(ZENAIDURA MACROURA)*. *Ph.D. thesis, Univ. Mo.* v + 104 p., 9 figs. 1968. *WR 145: 76*
Courtesy/ Henry M. Reeves.

Goforth, W. Reid. THE THREE-BIRD CHASE IN MOURNING DOVES. *Wilson Bull.* 83 (4): 419-424. Dec. 1971. *WR 145: 76*
[Mo. Coop. Wildl. Res. Unit, Columbia.] Information on frequency and position of male and female mourning doves *(Zenaidura macroura)* in chases, origin and termination of chases, and flight patterns during chases.--Courtesy/ Paul A. Stewart.

Henry, David L. POPULATION DYNAMICS AND MIGRATION OF MISSOURI DOVES. *M.A. thesis, Univ. Mo.* vi + 104 p., 6 figs. 1970. *WR 145: 76*
Courtesy/ Henry M. Reeves.

Houston, Douglas B. A CONTRIBUTION TO THE ECOLOGY OF THE BAND-TAILED PIGEON, *COLUMBA FASCIATA*, SAY. *M.A. thesis, Univ. Wyo.* 74 p., 13 figs. 1963. *WR 145: 76*
Courtesy/ Henry M. Reeves.

Irby, Harold Dewey. THE RELATIONSHIP OF CALLING BEHAVIOR TO MOURNING DOVE POPULATIONS AND PRODUCTION IN SOUTHERN ARIZONA. *Ph.D. thesis, Univ. Ariz.* xii + 100 p., 16 figs. 1964. *WR 145: 76*
"Zenaidura macroura."--Courtesy/ Henry M. Reeves.

Jackson, Gary L. THE BREEDING BEHAVIOR OF WILD MOURNING DOVES *(ZENAIDURA MACROURA)*. *M.A. thesis, Univ. Mo.* v + 96 p., 10 figs. June 1963. *WR 145: 76*
Courtesy/ Henry M. Reeves.

LaPerriere, Arthur Joseph Louis III. FACTORS INFLUENCING DIFFERENTIAL CALLING RATES OF MOURNING DOVES. *M.S. thesis, Iowa State Univ.* iv + 109 p., 10 figs. 1971. *WR 145: 76*
Courtesy/ Henry M. Reeves.

LaPerriere, Arthur J., and Arnold O. Haugen. TRENDS OF MOURNING DOVE POPULATIONS IN BOONE COUNTY, IOWA FARM GROVES. *Iowa State J. Sci.* 46(3): 417-424, 2 figs. Feb. 1972. *WR 145: 76*
[Alaska Coop. Wildl. Res. Unit, College Station.] Abstract: Findings showed a significant decline of mourning dove *(Zenaidura macroura)* nesting populations

on the central Iowa study area from 1963 to 1969. Some factors which may be related to this decline include unfavorable seasonal weather and deterioration of nesting habitat. Additional findings point out the usefulness of the nest call, a three-note call, for locating nests and suggests their possible use in estimating local nesting activity and production.

Ljunggren, Lars. STUDIES ON SEASONAL ACTIVITY IN PIGEONS WITH ASPECTS ON THE ROLE OF BIOGENIC MONOAMINES IN THE ENDOCRINE ORGANS. *Inst. Zool., Univ. Lund, C W K Gleerup/Lund.* 69 p., 20 figs. 1969. *WR 145: 77*
[Univ. Lund, Lund, Sweden.] Summary of previously published results and of new data on wood pigeons, *Columba palumbus*, and common pigeons, *Columba livia domestica*, collected since 1961. The results concern mainly seasonal variations in especially the endocrine organs. Special attention has also been paid to the appearance of biogenic monoamines and their possible relations to the seasonal changes in the endocrine organs.--From summ.

March, G. L., and R. M. F. S. Sadleir. STUDIES ON THE BAND-TAILED PIGEON *(COLUMBA FASCIATA)* IN BRITISH COLUMBIA. I. SEASONAL CHANGES IN GONADAL DEVELOPMENT AND CROP GLAND ACTIVITY. *Canadian J. Zool.* 48: 1353-1357. 1970. [From Auk 89(1), 1972.] *WR 145: 77*

Naether, Carl. ENCOUNTERS WITH THE WESTERN MOURNING DOVE. *Avic. Mag.* 77(5): 169-171 + 3 pls. Sept.-Oct. 1971. *WR 145: 77*
[Encino, Calif.] *"Zenaidura macroura marginella."*

Parker, S. A. AN UNSUCCESSFUL SEARCH FOR THE SOLOMON ISLANDS CROWNED PIGEON. *Emu* 72(1): 24-26. Jan. 1971. *WR 145: 77*
[44 Mills Street, Clarence Park, South Australia.] "Although one cannot say even now that *Microgoura meeki* is extinct, the likelihood of its survival is small. The feral cat, its reported predator, has been widespread in the Solomon Islands for several decades."

Radkiewicz, Józef. SYNOGARLICA TURECKA W PÓŁNOCNO-ZACHODNIEJ POLSCE. [THE COLLARED TURTLE-DOVE IN NORTH-WESTERN POLAND.] *Chrońmy Przyrodę Ojczystą* 26(6): 40-41. Nov.-Dec. 1970. In Polish. *WR 145: 77*
"Streptopelia decaocto."

Rice, Leslie A. POPULATION DYNAMICS OF THE MOURNING DOVE IN SOUTH DAKOTA. *M.S. thesis, S. Dak. State Univ.* 121 p., 13 figs. 1971. *WR 145: 77*
Courtesy/ Henry M. Reeves.

Sharp, Brian. A TRANSCONTINENTAL MOURNING DOVE RECOVERY. *Auk* 88(4): 924. Oct. 1971. *WR 145: 77*
[Migratory Bird Populations Sta., Laurel, Md.] A mourning dove *(Zenaida macroura)* was banded during August in New York and recovered during September of the following year in California.--Courtesy/ Paul A. Stewart.

Silovsky, Gene Donald. DISTRIBUTION AND MORTALITY OF THE PACIFIC COAST BAND-TAILED PIGEON. *M.S. thesis, Oreg. State Univ.* 70 p., [8] figs. 1969. *WR 145: 77*
Courtesy/ Henry M. Reeves.

Stair, John Lester. CHRONOLOGY OF THE NESTING SEASON OF WHITE-WINGED DOVES *ZENAIDA ASIATICA MEARNSI* (RIDGWAY) IN ARIZONA. *M.S. thesis, Univ. Ariz.* viii + 69 p., 18 figs. 1970. *WR 145: 77*
Courtesy/ Henry M. Reeves.

Straus, Milo A. INCIDENCE OF *TRICHOMONAS GALLINAE* IN MOURNING DOVE, *ZENAIDURA MACROURA*, POPULATIONS OF ARIZONA. *M.S. thesis, Univ. Ariz.* vii + 44 p., 4 figs. 1966. *WR 145: 77*
Courtesy/ Henry M. Reeves.

DOVES & PIGEONS--Continued

Truett, Joe C. MOVEMENTS OF IMMATURE MOURNING DOVES IN SOUTHERN ARIZONA. *M.S. thesis, Univ. Ariz.* x + 60 p., 15 figs. 1966. *WR 145: 78*
Courtesy/ Henry M. Reeves.

Watts, Kenneth Neil. POPULATION DYNAMICS OF THE MOURNING DOVE IN LOUISIANA. *M.S. thesis, La. State Univ.* xxv + 262 p., 30 figs. 1968. *WR 145: 78*
Courtesy/ Henry M. Reeves.

Zeigler, Don Leslie. CROP-MILK CYCLES IN BAND-TAILED PIGEONS AND LOSSES OF SQUABS DUE TO HUNTING PIGEONS IN SEPTEMBER. *M.S. thesis, Oreg. State Univ.* 48 p., 10 figs. 1971. *WR 145: 78*
Courtesy/ Henry M. Reeves.

WATERFOWL

Allen, Jerry W. COMMENTS ON A TWO-YEAR WOOD DUCK SURVEY. *Ky. Warbler* 48 (1): 3-6. Feb. 1972. *WR 145: 78*
[804 19th St., Murray, Ky.] *"Aix sponsa."*

Bengtson, Sven-Axel, and Staffan Ulfstrand. FOOD RESOURCES AND BREEDING FREQUENCY OF THE HARLEQUIN DUCK *HISTRIONICUS HISTRIONICUS* IN ICELAND. *Oikos* 22(2): 235-239, illus. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 78*
[Univ. Lund, Lund, Sweden.] The breeding frequency of all four populations studied was markedly reduced in 1970.

Bolen, Eric G. SOME VIEWS ON EXOTIC WATERFOWL. *Wilson Bull.* 83(4): 430-434, 1 fig. Dec. 1971. *WR 145: 78*
[Tex. Tech Univ., Lubbock.] Notes particularly the hazards to the black-bellied tree duck *(Dendrocygna autumnalis)* likely to result from possible introduction of muscovy ducks *(Cairina moschata).*--Courtesy/ Paul A. Stewart.

Brunn, Bertel. NORTH AMERICAN WATERFOWL IN EUROPE. *British Birds* 64(9): 305-408, illus. Sept. 1971. *WR 145: 78*
[125 East 72nd St., New York, N.Y.] Annotated listing of the waterfowl that breed in the New World and migrate regularly to wintering grounds in Europe.

Bylin, K. [COURTSHIP AND CALLS OF THE RED-THROATED LOON *GAVIA STELLATA.*] *Vår Fågelvärld* 30: 79-83. 1971. [From Auk 89(1), 1972. In Swedish with English summ.] *WR 145: 78*

Cornwell, George, and H. Albert Hochbaum. COLLISIONS WITH WIRES--A SOURCE OF ANATID MORTALITY. *Wilson Bull.* 83(3): 305-306, 2 figs. Sept. 1971. *WR 145: 78*
[Univ. Fla., Gainesville.] Loss of waterfowl by striking wires is substantial and goes largely unnoticed.--Courtesy/ Paul A. Stewart.

Evrard, James O. A WINTER POPULATION OF GOLDENEYES. *Passenger Pigeon* 33(4): 163-168, 1 fig. Winter 1971. *WR 145: 78*
[Box 287B, Rt. 1, Park Falls, Wis.] *"Bucephala clangula."*

Fog, Jørgen. SURVIVAL AND EXPLOITATION OF MALLARDS *(ANAS PLATYRHYNCHOS)* RELEASED FOR SHOOTING. *Danish Rev. Game Biol.* 6(4): 1-12, 1 fig. 1971. 'In English with Danish and Russian summ. *WR 145: 78*
[Vildtbiol. Sta., Kalø, 8410 Rønde, Denmark.]

Fried, Eric, and Stephen Browne. FATE OF DUCK EGGS LAID IN GOOSE NESTS. *N.Y. Fish & Game J.* 18(1): 72. Jan. 1971. *WR 145: 78*
[N.Y. State Dep. Environ. Conserv., Albany.]

Gjersing, Frank Mathew. A STUDY OF WATERFOWL PRODUCTION ON TWO REST ROTATION GRAZING UNITS IN NORTHCENTRAL MONTANA. *M.S. thesis, Univ. Mont.* viii + 42 p., 7 figs. June 1971. *WR 145: 79*

Study conducted in Phillips County, Montana during 1968-1970.--Courtesy/ Jack D. Jones.

Grandy, John W. IV. DIGESTION AND PASSAGE OF BLUE MUSSELS EATEN BY BLACK DUCKS. *Auk* 89(1): 189-190. Jan. 1972. *WR 145: 79*

[Nat. Parks & Conserv. Ass., 1701 Eighteenth St., N.W., Washington, D.C.] Black ducks *(Anas rubripes)* digested and passed blue mussels *(Mytilus edulis)* in 20-30 minutes.--Courtesy/ Paul A. Stewart.

Harrison, James M., and Jeffery G. Harrison. TEN COLOUR VARIETIES OF THE EURASIAN WIGEON. *Bull. British Ornithol. Club* 91(6): 154-157, illus. 20 Dec. 1971. *WR 145: 79*

"Anas penelope."

Hoekstra, Hayo H. TOWARDS SAVING EUROPE'S WILDFOWL. *Biol. Conserv.* 3(3): 217-219. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 79*

[Eur. Inf. Cent. Nat. Conserv., Strasbourg, France.] Discussion of the activities and organization of the International Wildfowl Research Bureau.

Kiel, W. H., Jr. A RELEASE OF HAND-REARED MALLARDS IN SOUTH TEXAS. *Tex. A&M Univ., Tex. Agr. Exp. Sta.* 12 p., 6 figs. Oct. 1970. *WR 145: 79*

[King Ranch, Inc., Kingsville, Tex.] An experimental release of 3,071 hand-reared mallards, *Anas platyrhynchos*, was made in South Texas in 1962. First-year mortality rate was 74%, and 7% remained at the start of the third year of life. Whether production will be adequate to maintain a breeding population is unknown.

Low, Jessop B. THE PUBLISHED AND UNPUBLISHED HISTORY OF THE ECOLOGY OF WATERFOWL AND OTHER ASSOCIATED BIRDS IN UTAH. *Utah Coop. Wildl. Res. Unit.* [26] p. Aug. 1970. *WR 145: 79*

[Utah State Univ., Logan.] A bibliography.

McLaughlin, J. D., and M. D. B. Burt. OBSERVATIONS ON THE MORPHOLOGY AND LIFE CYCLE OF *HYMENOLEPSIS HOPKINSI* SCHILLER 1951 (CESTODA: CYCLOPHYLLIDAE), A PARASITE OF BLACK DUCKS *(ANAS RUBRIPES* BREWSTER). *Canadian J. Zool.* 48: 1043-1046. 1970. [From Auk 89(1), 1972.] *WR 145: 79*

Pounder, B. WINTERING EIDERS IN THE TAY ESTUARY. *Scottish Birds* 6(8): 407-419, 7 figs. Winter 1971. *WR 145: 79*

Summary: The Eider flocks that winter in the Tay estuary are shown to carry out a tide-dependent daily movement cycle. The numbers wintering in the estuary vary between 15000 during the first half of the winter and 10000 during the second half, the fall-off being caused by migrations both northwards and southwards along the adjacent coasts. The majority of the birds are considered to enter the Tay after a sojourn at moulting grounds between Aberdeenshire and Fife Ness during the late summer.

Raikow, Robert J. THE OSTEOLOGY AND TAXONOMIC POSITION OF THE WHITE-BACKED DUCK, *THALASSORNIS LEUCONOTUS*. *Wilson Bull.* 83(3): 270-277, 2 figs. Sept. 1971. *WR 145: 79*

[Univ. Calif., Berkeley.] Courtesy/ Paul A. Stewart.

Robinson, Gary G. W. VEGETATION AND PHYSICAL FACTORS INFLUENCING WATERFOWL PRODUCTION. *M.S. thesis, Colo. State Univ.* 148 p., 45 figs. 1971. *WR 145: 79*

"Anas platyrhynchos and A. acuta."

Sage, Bryan L. A STUDY OF WHITE-BILLED DIVERS IN ARCTIC ALASKA. *British Birds* 64(12): 519-528, 5 pls. Dec. 1971. *WR 145: 80*
Results of studies on the habitat, breeding biology and behavior of the white-billed diver *Gavia adamsii* in arctic Alaska in 1969-71 are presented, and comparisons made with the great northern diver *G. immer*.--From summ.

Schranck, Barnet W. WATERFOWL NEST COVER AND SOME PREDATION RELATIONSHIPS. *J. Wildl. Mgmt.* 36(1): 182-186. Jan. 1972. *WR 145: 80*
[Bur. Sport Fisheries & Wildl., Valley City, N. Dak.] Abstract: Success was found to be highest for duck nests located in cover types presenting the greatest barrier to predation. Natural waterfowl nests were 71 percent successful in heavy cover and 45 percent successful in light cover. Simulated nests were 60 percent successful in heavy cover and 20 percent successful in light cover. From data on studies of simulated nests, predator control was also shown to be effective in increasing duck nest success. Average nest success in areas with predator control was 72 percent, whereas average success in areas without control was 46 percent.

Sugden, Lawson G. RATE OF LOAFING RAFT USE BY DUCKS. *Canadian Field Natur.* 85(4): 324-325. Oct.-Dec. 1971. *WR 145: 80*
[Canadian Wildl. Serv., Saskatoon, Saskatchewan, Canada.] Abstract: Use of loafing rafts by ducks was measured on five parkland and six grassland lakes. Rafts were placed at the rate of one per 100 yards of shoreline. Significant differences in the proportion of ducks using rafts were found among the 13 species in both areas. Highest use was observed in Lesser Scaup, Blue-winged Teal, and Gadwall. Ruddy Ducks and White-winged Scoters were never seen on rafts. The proportion of ducks seen on rafts was significantly higher for most species on parkland lakes, apparently because those lakes had fewer natural resting sites.

Sugden, Lawson G. FEEDING ACTIVITY OF CAPTIVE LESSER SCAUP. *Canadian Wildl. Serv. Prog. Notes* no. 24. Dec. 1971. In French and in English. *WR 145: 80*
[Canadian Wildl. Serv., Saskatoon, Saskatchewan, Canada.] *"Aythya affinis."*

Tamisier, Alain. LES BIOMASSES DE NOURRITURE DISPONIBLE POUR LES SARCELLES D'HIVER *ANAS CRECCA CRECCA* EN CAMARGUE. [THE BIOMASSES OF AVAILABLE FOOD FOR EUROPEAN TEAL *ANAS CRECCA CRECCA* IN THE CAMARGUE DURING THE WINTER.] *Terre & Vie* 118(3): 344-377, 12 figs. July-Sept. 1971. In French with English summ. *WR 145: 80*
[Centre d'Ecologie de Camargue, Le Sambuc, France.] The availability of food resources by teal depends essentially on abiotic factors; the hydrological status of the marshland, the depth of water covering the food source, and the permeability and structure of the soil substrate.--From summ.

Titman, Rodger D., and James K. Lovther. PARASITISM OF MALLARD NESTS BY COMMON GOLDENEYES. *Canadian Field Natur.* 85(4): 323-324. Oct.-Dec. 1971. *WR 145: 80*
[Univ. New Brunswick, Fredericton, New Brunswick, Canada.] Abstract: Goldeneye eggs were found in 11 nests incubated by mallard hens at the Delta Waterfowl Research Station in Manitoba. These were all located in wooden nest boxes. Goldeneye eggs pipped in four nests, and three ducklings hatched in one nest.

Washington, Derek. BREEDING THE LONG-TAILED DUCK. *Avic. Mag.* 78(1): 1-4 + 2 pls. Jan.-Feb. 1972. *WR 145: 80*
[East Grinstead, Sussex, England.] *"Clangula hyemalis."*

Willi, Peter. ZUGVERHALTEN, AKTIVITÄT, NAHRUNG UND NAHRUNGSERWERB AUF DEM KLINGNAUER STAUSEE HÄUFIG AUFTRETENDER ANATIDEN, INSBESONDERE VON KRICKENTE, TAFELENTE UND REIHERENTE. [MIGRATORY BEHAVIOR, ACTIVITY, FOOD AND FEEDING AT THE KLINGNAUER RESERVOIR OF FREQUENT OCCURRING WATERFOWL, ESPECIALLY THE EUROPEAN TEAL, THE COMMON POCHARD AND THE TUFTED DUCK.] *Ornithol. Beob.* 67(4): 141-217, 37 figs. Sept. 1970. In German with English summ. *WR 145: 80*

Winner, Robert W. ACTIVITY OF BLACK AND MALLARD DUCKS IN A CONTROLLED ENVIRONMENT. *J. Wildl. Mgmt.* 36(1): 187-191, 4 figs. Jan. 1972. *WR 145: 81*
[Miami Univ., Oxford, Ohio.] Abstract: The diel activity patterns of mallard *(Anas platyrhynchos)* and black *(A. rubripes)* ducks were recorded under controlled environmental conditions. Both species exhibited a bimodal activity pattern when exposed to decreasing light intensity during the final hour of the photoperiod. Under conditions of constant light intensity, the second activity peak of the black ducks disappeared but that of the mallards persisted. This differential dependence on changing light intensity as a stimulus to activity agrees with data previously collected on the behavior of the two species under field conditions.

SWANS & GEESE

Cowling, S. J., and D. M. White. BREEDING OF THE MAGPIE GOOSE AT THE SERENDIP WILDLIFE RESEARCH STATION. *Emu* 72(1): 28-29. Jan. 1972. *WR 145: 81*
[Arthur Rylah Inst. Environ. Res., Heidelberg, Victoria, Australia.] *"Anseranas semipalmata."*

Debbie, John G. HEMAGGLUTINATION-INHIBITION ANTIBODY TITERS AGAINST NEWCASTLE DISEASE VIRUS IN CANADA GEESE. *N.Y. Fish & Game J.* 18(1): 64-65. Jan. 1971. *WR 145: 81*
[N.Y. State Dep. Health, Albany.] *"Branta canadensis."*

Fog, Mette. HAUNTS IN DENMARK FOR WHITE-FRONTED GOOSE *(ANSER ALBIFRONS)*, BEAN GOOSE *(ANSER FABALIS* NOW *BRACHYRHYNCHUS)* AND PINK-FOOTED GOOSE *(ANSER FABALIS BRACHYRHYNCHUS)*. *Danish Rev. Game Biol.* 6(3): 1-12, 5 figs. 1971. In English with Danish and Russian summ. *WR 145: 81*
[Vildtbiol. Sta., Kalø, 8410 Rønde, Denmark.]

Grieb, Jack R. THE SHORTGRASS PRAIRIE CANADA GOOSE POPULATIONS. *Wildl. Monographs* no. 22. 49 p., 14 figs. May 1970. *WR 145: 81*
[Colo. Game, Fish & Parks Div., Fort Collins.] Topics covered are taxonomy, range and movements, harvest, population status, and recommendations for management of *Branta canadensis*.

Hudec, Karel. THE BREEDING ENVIRONMENT OF THE GREYLAG GOOSE *(ANSER ANSER)* IN CZECHOSLOVAKIA. *Zool. Listy* 20(2): 177-194, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 81*
[Czechoslovak Acad. Sci., Brno, Czechoslovakia.]

Korol, Ernie, and Alex Dzubin. ORIGIN AND SUCCESS OF GOOSE HUNTERS IN WESTERN SASKATCHEWAN DURING THE AUTUMN OF 1967. *Canadian Wildl. Serv. Prog. Notes* no. 8. 9 p., 1 fig. 25 Oct. 1968. *WR 145: 81*
[Saskatchewan Dep. Natur. Resour., Kindersley, Saskatchewan, Canada.]

Kuyken, Eckhart. DE GANZENPLEISTERPLAATS BIJ DAMME, BELGIË, IN GEVAAR? [THE WINTERING GROUNDS FOR WILD GEESE AT DAMME, BELGIUM--ENDANGERED?] *Vogeljaar* 18 (4): 309-312, illus. Oct. 1970. In Dutch. *WR 145: 81*
[K.L. Ledeganckstraat 35, Ghent, Belgium.]

Lebret, T., and A. Timmerman. EEN CONCENTRATIE VAN RUIENDE GRAUWE GANZEN *(ANSER ANSER)* IN NEDERLAND. [A CONCENTRATION OF GREY LAG GEESE *(ANSER ANSER)* IN WING MOULT IN THE NETHERLANDS.] *Limosa* 41(1-2): 2-17, 2 maps + 1 fig. on 1 pl. 1968. In Dutch with English summ. *WR 145: 81*

Lesser, Henryk. STAN LICZEBNY ŁABĘDZI NIEMYCH W POLSCE. [THE STATUS OF THE MUTE SWAN IN POLAND.] *Chrońmy Przyrodę Ojczystą* 24(2): 50-52. Mar.-Apr. 1968. In Polish. *WR 145: 81*

Malcolm, Jon M. TWO FEMALE TRUMPETER SWANS SHARE A NEST. *Murrelet* 52(2): 24-25. May-Aug. 1971. *WR 145: 82*
[Turnbull Nat. Wildl. Refuge, Cheney, Wash.] *"Olor buccinator."*

Owen, Myrfyn. THE SELECTION OF FEEDING SITE BY WHITE-FRONTED GEESE IN WINTER. *J. Appl. Ecol.* 8(3): 905-917, 9 figs. Dec. 1971. *WR 145: 82*
[Wildfowl Trust, Slimbridge, Gloucestershire, England.] Summary: An experiment to investigate the selection of feeding zone by geese on salting pasture is described. The amount of usage of different zones was measured by counting the birds' droppings on pegged plots. As grazing geese defecate every 3.5 min the technique is highly sensitive. Neither the position of plots in the study area in relation to sources of disturbance, nor the methods of marking plots greatly affected feeding behaviour. By two criteria, the timing of usage, and the relative quantity of food per unit area remaining after usage by the geese, the birds were found to be highly selective in their choice of vegetation zone. The basis of selection is discussed in relation to grass height, the proportion of dead material in the sward, vegetational composition and its nutritive value.

Rutherford, W. H. EXPERIMENTAL MANIPULATION OF CANADA GOOSE POPULATIONS IN COLORADO. *Colo. Field Ornithol.* 2: 1-5. 1967. [From Auk 88(4), 1971.] *WR 145: 82*
"Branta canadensis."

Ryder, John P. SIZE DIFFERENCES BETWEEN ROSS' AND SNOW GOOSE EGGS AT KARRAK LAKE, NORTHWEST TERRITORIES IN 1968. *Wilson Bull.* 83(4): 438-439. Dec. 1971. *WR 145: 82*
[Lakehead Univ., Thunder Bay "P", Ontario, Canada.] Snow goose *(Chen caerulescens)* eggs are larger than eggs of Ross' goose *(C. rossii)* so that mixed nests can be identified by egg sizes.--Courtesy/ Paul A. Stewart.

Speckmann, Gunter, Alexander Robertson, and W. Allan Webster. SPHAERIDIOTREMA FLUKES, THE CAUSE OF ULCERATIVE ENTERITIS IN A CYGNET *(CYGNUS OLOR)*. *J. Wildl. Dis.* 8(1): 1-2. Jan. 1972. *WR 145: 82*
[Canada Dep. Agr., P.O. Box 1400, Hull, Quebec, Canada.] Abstract: A 5-week-old cygnet died of severe ulcerative enteritis caused by *Sphaeridiotrema globulus* (Rudolphi 1814). Environmental conditions under which the cygnet was raised and pathological findings are described.

Trauger, David L., Alex Dzubin, and John P. Ryder. WHITE GEESE INTERMEDIATE BETWEEN ROSS' GEESE AND LESSER SNOW GEESE. *Auk* 88(4): 856-875, 1 fig. Oct. 1971. *WR 145: 82*
[Iowa State Univ., Ames.] Probable hybrids of *Chen rossii* and *C. hyperborea*. --Courtesy/ Paul A. Stewart.

Veselovsky, Z. ZUR ETHOLOGIE DER HUEHNERGANS *(CEREOPSIS NOVAEHOLLANDIAE LATH.)*. [ON THE ETHOLOGY OF THE CAPE BARREN GOOSE *(CEREOPSIS NOVAEHOLLANDIAE LATH.)*. *Z. Tierpsychol.* 27(8): 915-945. 1970. [From Biol. Abstr. 53(2), 1972. In German with English summ.] *WR 145: 82*
[Zool. Garten, Prague, Czechoslovakia.]

Würdinger, I. ERZEUGUNG, ONTOGENIE UND FUNKTION DER LAUTÄUSSERUNGEN BEI VIER GÄNSEARTEN *(ANSER INDICUS, A. CAERULESCENS, A. ALBIFRONS UND BRANTA CANADENSIS)*. [PRODUCTION, DEVELOPMENT, AND FUNCTION OF VOCALIZATIONS OF FOUR SPECIES OF GEESE *(ANSER INDICUS, A. CAERULESCENS, A. ALBIFRONS AND BRANTA CANADENSIS)*.] *Z. Tierpsychol.* 27: 257-302. 1970. [From Auk 89(1), 1972. In English with German summ.] *WR 145: 82*

SHOREBIRDS, MARSH BIRDS & THEIR ALLIES

Britt, Thomas Lee. STUDIES OF WOODCOCK ON THE LOUISIANA WINTERING GROUND. *M.S. thesis, La. State Univ.* xi + 105 p., 12 figs. 1971. *WR 145: 83*
Courtesy/ Henry M. Reeves.

Broberg, L. [THE BITTERN *BOTAURUS STELLARIS* IN SWEDEN 1969.] *Vår Vägelvärld* 30: 91-98. 1971. [From Auk 89(1), 1972. In Swedish with English summ.] *WR 145: 83*

Dennis, Clifford J. OBSERVATIONS ON THE FEEDING BEHAVIOR OF THE GREAT BLUE HERON. *Passenger Pigeon* 33(4): 166-172. Winter 1971. *WR 145: 83*
[Wis. State Univ., Whitewater.] Observations on the feeding behavior of *Ardea herodias* were made on the Mississippi River during the years 1968, 1969, and 1970.

Dickerman, Robert W., and F. Haverschmidt. FURTHER NOTES ON THE JUVENAL PLUMAGE OF THE SPOTTED RAIL *(RALLUS MACULATUS). Wilson Bull.* 83(4): 444-446, 1 fig. Dec. 1971. *WR 145: 83*
[Cornell Univ. Med. Coll., New York, N.Y.] Courtesy/ Paul A. Stewart.

Duke, Gary Earl. STUDY OF THE RELIABILITY OF CENSUSES OF SINGING MALE WOODCOCK. *M.S. thesis, Mich. State Univ.* v + 49 p., 7 figs. 1964. *WR 145: 83*
Courtesy/ Henry M. Reeves.

Dunford, Robert Daniel. THE SUMMER BEHAVIOR OF AMERICAN WOODCOCK IN CENTRAL MAINE. *M.S. thesis, Univ. Maine.* 98 p., 17 figs. 1971. *WR 145: 83*
Courtesy/ Henry M. Reeves.

Ferrigno, Frederick. SOME ASPECTS OF THE NESTING BIOLOGY, POPULATION DYNAMICS, AND HABITAT ASSOCIATIONS OF THE CLAPPER RAIL. *M.S. thesis, Rutgers Univ.* iv + 69 p. + 10 pls. 1966. *WR 145: 83*
Courtesy/ Henry M. Reeves.

Forsythe, Dennis M. CLICKING IN THE EGG-YOUNG OF THE LONG-BILLED CURLEW. *Wilson Bull.* 83(4): 441-442, 1 fig. Dec. 1971. *WR 145: 83*
[The Citadel, Charleston, S.C.] Unhatched chicks of long-billed curlews *(Numenius americanus)* clicked 21 to 9 hours before hatching.--Courtesy/ Paul A. Stewart.

Frederickson, Leigh H. COMMON GALLINULE BREEDING BIOLOGY AND DEVELOPMENT. *Auk* 88(4): 914-919, 3 figs. Oct. 1971. *WR 145: 83*
[Univ. Mo., Puxico.] *"Gallinula chloropus."*--Courtesy/ Paul A. Stewart.

Gaviño T., Gonzalo, and Robert W. Dickerman. NESTLING DEVELOPMENT OF GREEN HERONS AT SAN BLAS, NAYARIT, MÉXICO. *Condor* 74(1): 72-79, 6 figs. Spring 1972. *WR 145: 83*
[Gabriel Mancera 511, México City, México.] A table based on measurements of green herons, *Butorides virescens*, which permits the aging of a heron nestling within a range of two days is presented. Caution should be used when applying these aging criteria because of variation in food supplies and/or other factors that affect growth rates from one area to another, especially between tropical and temperate climates.--From summ.

Glasgow, Leslie Lloyd. CONTRIBUTIONS TO THE KNOWLEDGE OF THE ECOLOGY OF THE AMERICAN WOODCOCK, *PHILOHELA MINOR* (GMELIN), ON THE WINTERING RANGE IN LOUISIANA. *Ph.D. thesis, Tex. A&M Univ.* xii + 158 p., 15 figs. 1958. *WR 145: 83*
Courtesy/ Henry M. Reeves.

Gloe, Peter. ZUM VORKOMMEN DER UFERSCHNEPFE *(LIMOSA LIMOSA)* IM SÜDLICHEN DITHMARSCHEN. [ON THE OCCURRENCE OF THE BLACK-TAILED GODWIT *(LIMOSA LIMOSA)* IN SOUTHERN DITHMARSCHEN.] *Ornithol. Mitteil.* 22(10): 213-215, 2 figs. Oct. 1970. In German. *WR 145: 83*
[Pestalozzistrasse 7, Braunschweig, Germany.]

Gloe, Peter. BEITRAG ZUM BRUTBIOTOP DES SÄBELSCHNÄBLERS *(RECURVIROSTRA AVOSETTA)* IN SCHLESWIG-HOLSTEIN. [CONTRIBUTION ON THE BREEDING BIOTOPE OF THE AVOCET *(RECURVIROSTRA AVOSETTA)* IN SCHLESWIG-HOLSTEIN.] *Ornithol. Mitteil.* 23 (1): 3-9, illus. Jan. 1971. In German. *WR 145: 84*
[Pestalozzistrasse 7, Braunschweig, Germany.]

Goering, David K., and Ronald Cherry. NESTLING MORTALITY IN A TEXAS HERONRY. *Wilson Bull.* 83(3): 303-305. Sept. 1971. *WR 145: 84*
[Cottey Coll., Nevada, Mo.] "The nests that were more frequently visited were at least as successful as those infrequently observed, indicating that human visitation is not necessarily detrimental during the later stages of reproduction."—Courtesy/ Paul A. Stewart.

Heckenlively, Donald B. RESPONSES OF ADULT KILLDEERS TO A DOWNY YOUNG DISTRESS CALL. *Condor* 74(1): 107-108, 1 fig. Spring 1972. *WR 145: 84*
[Univ. Mich., Ann Arbor.] *"Charadrius vociferus."*

Heckenroth, H. DER WEISSSTORCH-BESTAND 1965 IM WESTLICHEN MITTELEUROPA. [THE STATUS OF THE WHITE STORK IN MIDDLE EUROPE IN 1965.] *Vogelwarte* 25: 27-46. 1969. [From Auk 88(4), 1971. In German.] *WR 145: 84*

Heckenroth, H. DER WEISSSTORCH-BESTAND VON NORDWEST-GRIECHENLAND 1968. [THE STATUS OF THE WHITE STORK IN NORTHWEST GREECE IN 1968.] *Vogelwarte* 25: 19-23. 1969. [From Auk 88(4), 1971. In German with English summ.] *WR 145: 84*

Heppleston, P. B. NEST SITE SELECTION BY OYSTERCATCHERS *(HAEMATOPUS OSTRALEGUS)* IN THE NETHERLANDS AND SCOTLAND. *Netherlands J. Zool.* 21(2): 208-211. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 84*
[Seals Res. Unit, Fish. Lab., Lowestoft, Suffolk, England.]

Hoffpauir, John Wade. THE DEVELOPMENT OF EXTERNAL AGING AND SEXING TECHNIQUES AND TRAPPING METHODS FOR COMMON SNIPE *(CAPELLA GALLINAGO DELICATA)* IN LOUISIANA. *M.S. thesis, La. State Univ.* x + 104 p., 18 figs. 1969. *WR 145: 84*
Courtesy/ Henry M. Reeves.

Imboden, Christoph. ZUR ÖKOLOGIE EINER RANDZONEN-POPULATION DES KIEBITZ *VANELLUS VANELLUS* IN DER SCHWEIZ. [ON THE ECOLOGY OF A MARGINAL ZONE POPULATION OF THE LAPWING *(VANELLUS VANELLUS)* IN SWITZERLAND.] *Ornithol. Beob.* 67(2): 41-58, 2 figs. Apr. 1970. In German with English summ. *WR 145: 84*
[Schweizerische Vogelwarte, Sempach, Switzerland.]

Kahl, M. P. SOME OBSERVATIONS ON THE BEHAVIOR OF WHISTLING HERONS. *Wilson Bull.* 83(3): 302-303. Sept. 1971. *WR 145: 84*
[Amer. Mus. Natur. Hist., New York, N.Y.] Flight, vocalizations, and ritualized displays of whistling herons *(Syrigma sibilatrix).*—Courtesy/ Paul A. Stewart.

Kahl, M. P. SPREAD-WING POSTURES AND THEIR POSSIBLE FUNCTIONS IN THE CICONIIDAE. *Auk* 88(4): 714-722, 4 figs. + 1 pl. Oct. 1971. *WR 145: 84*
[Amer. Mus. Natur. Hist., New York, N.Y.] Possible functions discussed are: wing drying, thermoregulation, feather treatment, shading nest contents, balancing, and social display.—Courtesy/ Paul A. Stewart.

Kazarian, Ralph. WHITE NAPED CRANE HATCHED AT CORNELL UNIVERSITY'S LABORATORY OF ORNITHOLOGY. *Ind. Audubon Quart.* 49(3): 115-117. Aug. 1971. *WR 145: 84*
[Cornell Univ. News, Ithaca, N.Y.]

Klemm, W. DER WEISSSTORCH-BESTAND IM GEBIET VON SIBIU (HERMANNSTADT) IN SIEBENBÜRGEN 1963 UND 1967. [THE STATUS OF THE WHITE STORK IN THE SIBIU DISTRICT TRANSYLVANIA IN 1963 AND 1967.] *Vogelwarte* 25: 25-26. 1969. [From Auk 88(4), 1971. In German.] *WR 145: 84*

Klemm, W. DER MORNELLEREGENPFEIFER, *EUDROMIAS MORINELLUS*, IN SIEBENBÜRGEN. [THE DOTTEREL *(EUDROMIAS MORINELLUS)* IN THE TRANSYLVANIAN ALPS (ROMANIA).] *J. Ornithol.* 111: 68-77. 1970. [From Auk 88(4), 1971. In German with English summ.] *WR 145: 85*

Krohn, William Barry. PATTERNS OF WOODCOCK ACTIVITIES ON SUMMER CONCENTRATION FIELDS IN CENTRAL MAINE. *M.S. thesis, Univ. Maine.* 103 p., 14 figs. 1969. *WR 145: 85*
Courtesy/ Henry M. Reeves.

Krohn, William B. SOME PATTERNS OF WOODCOCK ACTIVITIES ON MAINE SUMMER FIELDS. *Wilson Bull.* 83(4): 396-407, 2 figs. Dec. 1971. *WR 145: 85*
Migratory Bird Populations Sta., Laurel, Md.] The following are discussed for American woodcock *(Philohela minor)* in Maine: field usage, timing of crepuscular flights, movement between fields, age composition of population, and sex composition of population.--Courtesy/ Paul A. Stewart.

Lesser, Henryk. STAN LICZEBNY ŻURAWI *GRUS GRUS*, KORMORANÓW *PHALACROCORAX CARBO* I CZAPLI SIWYCH *ARDEA CINEREA*. [THE STATUS OF THE CRANES *(GRUS GRUS)*, CORMORANTS *(PHALACROCORAX CARBO)* AND HERONS *(ARDEA CINEREA)* IN POLAND.] *Chrońmy Przyrodę Ojczystą* 27(5): 52-56, 2 figs. Sept.-Oct. 1971. In Polish. *WR 145: 85*

Longley, William H. THE SANDHILL CRANES OF CARLOS AVERY. *Minn. Volunteer* 34 (199): 10-17, illus. Nov.-Dec. 1971. *WR 145: 85*
"In summary, the original male crane [*Grus canadensis*] and his mate(s) probably produced five young in six breeding seasons. The second male has been here for four seasons, but has produced no offspring to our knowledge."

Lumsden, Harry G. THE STATUS OF THE SANDHILL CRANE IN NORTHERN ONTARIO. *Canadian Field Natur.* 85(4): 285-293, 3 figs. Oct.-Dec. 1971. *WR 145: 85*
[Ontario Dep. Lands & Forests, Res. Branch, Canada.] Sandhill cranes *(Grus canadensis)* are widely distributed in the post-glacial, marine submerged area of the Hudson Bay lowlands in northern Ontario. In 1969 two nests were found in the Kinoje Lake area about 50 miles northwest of Moosonee. The incubation period of one clutch of eggs collected when fresh and hatched in an incubator was about 27 days.--From abstr.

MacLean, Stephen F., Jr., and Richard T. Holmes. BILL LENGTHS, WINTERING AREAS, AND TAXONOMY OF NORTH AMERICAN DUNLINS, *CALIDRIS ALPINA*. *Auk* 88(4): 893-901. Oct. 1971. *WR 145: 85*
[Univ. Alaska, College.] The dunlins or red-backed sandpipers breeding on the arctic tundra in North America are separable into three distinct groups on the basis of bill length.--Courtesy/ Paul A. Stevart.

McAllister, James R., and George R. Maxwell. LOCOMOTION, MAINTENANCE AND FEEDING BEHAVIOR OF THE GREAT BLUE HERON IN NORTHERN NEW YORK. *Kingbird* 21(4): 183-203, 8 figs. Oct. 1971. *WR 145: 85*
[Oswego High School, Oswego, N.Y.] Descriptions of the behavior patterns associated with locomotion included walking, flight, take-off, and landing; those of body maintenance included the alert position, preening, scratching, shaking, bill cleaning, stretching, sun bathing, defecation, sleeping, yawning, and relaxation. Descriptions of feeding behavior included adult feeding, feeding grounds, and feeding of the young. Specific comparisons were made between the great blue heron, the black-crowned night heron, and the green heron where merited.--From summ.

McKean, John L., and D. P. Vernon. NEW RECORDS OF TUBE-NOSED BIRDS (ORDER PROCELLARIIFORMES) FROM QUEENSLAND. *Mem. Queensland Mus.* 16(1): 141-143, illus. 1971. [From Biol. Abstr. 53(2), 1972.] *WR 145: 85*
[Queensland Mus., Brisbane, Queensland, Australia.]

Meyerriecks, Andrew J. FURTHER OBSERVATIONS ON USE OF THE FEET BY FORAGING HERONS. *Wilson Bull.* 83(4): 435-438. Dec. 1971. *WR 145: 86*
[Univ. South Fla., Tampa.] The purpose of this note is threefold: to describe personal observations on use of feet while foraging by two species, to describe variations in the behavior, and to add an additional observation for the green heron *(Butorides virescens).*--Courtesy/ Paul A. Stewart.

Milstein, P. le S., I. Prestt, and A. A. Bell. THE BREEDING CYCLE OF THE GREY HERON. *Ardea* 58: 171-257, 10 figs. + 2 pls. 1970. In English with Dutch summ. *WR 145: 86*
[Transvaal Div. Nature Conserv., Private Bag 209, Pretoria, South Africa.] The breeding cycle of *Ardea cinerea* was studied with emphasis on aberrant behavior possibly caused by sub-lethal residues of organochlorine insecticides. Results from this study have been consolidated with data in the literature to provide a comprehensive basis for current long-term research.--From summ.

Norton, David W. TWO SOVIET RECOVERIES OF DUNLINS BANDED AT POINT BARROW, ALASKA. *Auk* 88(4): 927. Oct. 1971. *WR 145: 86*
[Univ. Alaska, College.] *"Caldris alpina."*--Courtesy/ Paul A. Stewart.

Parkes, Kenneth C., Alan Poole, and Helen Lapham. THE RUDDY TURNSTONE AS AN EGG PREDATOR. *Wilson Bull.* 83(3): 306-308. Sept. 1971. *WR 145: 86*
[Carnegie Mus., Pittsburgh, Pa.] Incidence and manner of egg eating by ruddy turnstones *(Arenaria interpres)* is described.--Courtesy/ Paul A. Stewart.

Parmelee, D. F., M. D. Schwilling, and H. A. Stephens. GRUIFORM BIRDS OF CHEYENNE BOTTOMS. *Kans. Ornithol. Soc. Bull.* 21: 25-27. 1970. [From Auk 88(4), 1971.] *WR 145: 86*

Payne, Frederick Joseph. ASPECTS OF BEAVER FLOODING OF ALDER WOODCOCK HABITAT ON THE MOOSEHORN NATIONAL WILDLIFE REFUGE. *M.S. thesis, Univ. Maine.* iv + 76 p., 14 figs. 1961. *WR 145: 86*
Courtesy/ Henry M. Reeves.

Perry, Horace Randolph, Jr. DEVELOPMENT OF EXTERNAL AGING AND SEXING TECHNIQUES AND TRAPPING METHODS FOR COMMON SNIPE *(CAPELLA GALLINAGO DELICATA)* IN LOUISIANA WITH NOTES ON HABITAT AND BEHAVIOR. *M.S. thesis, La. State Univ.* xviii + 143 p., 29 figs. 1971. *WR 145: 86*
Courtesy/ Henry M. Reeves.

Petřík, František. NĚKOLIK POZNÁMEK K HNÍZDĚNÍ A POTRAVĚ BUKÁČKA MALÉHO *(IXOBRYCHUS MINUTUS).* [SOME REMARKS ON BREEDING AND FOOD OF THE LITTLE BITTERN *(IXOBRYCHUS MINUTUS).*] *Vertebr. Zpravy* 1969(2): 71-73, 1 fig. 1969. In Czech with English summ. *WR 145: 86*

Pounds, Hubert E. WOODCOCK NESTING AWAY FROM TREES. *British Birds* 65(1): 30-31. Jan. 1972. *WR 145: 86*
[27 Orchard Close, Ringwood, Hampshire, England.] *"Scolopax rusticola."*

Przybyła, Bolesław. BOCIAN BIAŁY GATUNKIEM GINĄCYM. [THE WHITE STORK, AN ENDANGERED SPECIES.] *Chrońmy Przyrodę Ojczystą* 24(5): 49-51. Sept.-Oct. 1968. In Polish. *WR 145: 86*

Radkiewicz, Józef. DROP W POLSCE WSPÓŁCZESNEJ. [THE GREAT BUSTARD IN CONTEMPORARY POLAND.] *Chrońmy Przyrodę Ojczystą* 26(2): 38. Mar.-Apr. 1970. In Polish. *WR 145: 86*
"Otis tarda."

Radkiewicz, Józef. BOCIAN BIAŁY *CICONIA CICONIA* L. W POWIECIE ŚŁUBICKIM. [THE WHITE STORK, *CICONIA CICONIA*, IN THE DISTRICT OF ŚŁUBICE, PROVINCE OF ZIELONA GÓRA.] *Chrońmy Przyrodę Ojczystą* 27(3): 58-64, 2 figs. May-June 1971. In Polish. *WR 145: 86*

Ramakka, James Michael. BREEDING SEASON BEHAVIOR OF RADIO-EQUIPPED MALE WOODCOCK. *M.S. thesis, Univ. Maine.* 59 p., 11 figs. Aug. 1971. *WR 145: 87*
"Philohela minor."--Courtesy/ Henry M. Reeves.

Rittinghaus, H. EIN BEITRAG ZUR ÖKOLOGIE UND ZUM VERHALTEN DES GOLDREGENPFEIFERS, *PLUVIALIS APRICARIUS*, ZU BEGINN DER BRUTZEIT. [A CONTRIBUTION ON THE ECOLOGY AND BEHAVIOR OF THE EUROPEAN GOLDEN PLOVER *(PLUVIALIS APRICARIUS)* AT THE BEGINNING OF THE BREEDING SEASON.] *Vogelwarte* 25: 57-65. 1969. [From Auk 88 (4), 1971. In German.] *WR 145: 87*

Schmidt, Gerald D., and Kenneth A. Neiland. *HYMENOLEPIS (HYM.) DEBLOCKI* SP. N., AND RECORDS OF OTHER HELMINTHS FROM CHARADRIIFORM BIRDS. *Canadian J. Zool.* 46(5): 1037-1040, 3 figs. 1968. *WR 145: 87*
[Colo. State Coll., Greeley.] Records are presented of 18 spp. of cestodes and trematodes collected from shorebirds near Bristol Bay, Alaska, in 1960.--From abstr.

Siegfried, W. R. FEEDING ACTIVITY OF THE CATTLE EGRET. *Ardea* 59: 38-46. 1971. In English with Dutch summ. *WR 145: 87*
[Percy FitzPatrick Inst., Cape Town, South Africa.] Observations on hunting methods and frequency of feeding activity and foraging efficiency of the cattle egret *(Ardeola ibis)*.

Siegfried, W. R. THE STATUS OF THE BALD IBIS OF SOUTHERN AFRICA. *Biol. Conserv.* 3(2): 88-92, 3 figs. Jan. 1971. *WR 145: 87*
[Percy FitzPatrick Inst., Cape Town, South Africa.] *"Geronticus calvus."*

Smyth, James Adger. THE LITERATURE OF THE VIRGINIA RAIL. *M.S. thesis, Cornell Univ.* v + 122 p. 1933. *WR 145: 87*
Courtesy/ Henry M. Reeves.

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Stollmann, A. POPULATIONSUNTERSUCHUNGEN AM WEISSSTORCH *(C. CICONIA)* IN DER SLOWAKEI 1968. [POPULATION INVESTIGATIONS OF THE WHITE STORK *(C. CICONIA)* IN CZECHOSLOVAKIA IN 1968.] *Vogelwarte* 25: 65-66. 1969. [From Auk 88(4), 1971. In German.] *WR 145: 87*

Szabó, László Vilmos. A PAJZSOS CANKÓ *(PHILOMACHOS PUGNAX)* FÉSZKELÉSE A CSÁKVÁRI RÉTEN. [BREEDING OF THE RUFF *(PHILOMACHOS PUGNAX)* ON THE MEADOW OF CSAKVAR.] *Állattani Koezl* 58(1-4): 174-175. 1971. [From Biol. Abstr. 53(2), 1972. In Hungarian with German summ.] *WR 145: 87*
[Csákvár, Hungary.] *"P. pugnax."*

Vernon, C. J. OBSERVATIONS ON *EGRETTA VINACEIGULA*. *Bull. British Ornithol. Club* 91(6): 157-159. 20 Dec. 1971. *WR 145: 87*
Includes comparative measurements of 5 other spp.

Westermann, J. H. OM HET VOORTBESTAAN VAN DE FLAMINGO'S VAN ZUID-BONAIRE 1957-1968. [ON THE SURVIVAL OF THE FLAMINGOS OF SOUTH BONAIRE, 1957-1968.] *Uitg. Natuurwet. Werkgoep Ned. Antillen Curacao* 17. p. 195-228, illus. 1969. [From Biol. Abstr. 53(2), 1972. In Dutch with English summ.] *WR 145: 87*
[P.O. Box 2090, Antilles, Carmabi, Curacao.]

Westfall, Claude Z. A STUDY OF WOODCOCK BEHAVIOR ON THEIR BREEDING GROUNDS IN CENTRAL MAINE. *M.S. thesis, Univ. Maine.* v + 117 p., 17 figs. 1954. *WR 145: 87*
Courtesy/ Henry M. Reeves.

Williams, Sartor Otho III. POPULATION DYNAMICS OF WOODCOCK WINTERING IN LOUISIANA. *M.S. thesis, La. State Univ.* viii + 68 p., 10 figs. 1969. *WR 145: 88*
Courtesy/ Henry M. Reeves.

SEABIRDS & THEIR ALLIES

Bankovics, Attila. KISCSÉR *(STERNA ALBIFRONS)* ÉS KUCSMÁS BILLEGETŐ *(MOTACILLA FLAVA FELDEGGI)* A CSAJTAVON. [THE LITTLE TERN *(STERNA ALBIFRONS)* AND THE WAGTAIL *(MOTACILLA FLAVA FELDEGGI)* AT CSAJ LAKE.] *Allattani Koezl* 58(1-4): 160-163, illus. 1971. [From Biol. Abstr. 53(2), 1972. In Hungarian with German summ.] *WR 145: 88*
[Pusztaszer, Hungary.]

Boeker, Erwin L. A SURVEY OF WHITE PELICAN NESTING COLONIES IN 1971. *Amer. Birds* 26(1): 24, 125. Feb. 1972. *WR 145: 88*
[Denver Wildl. Res. Center, Tempe, Ariz.] *"Pelecanus erythrorhynchos."*

Coomans de Ruiter, L. DE AALSCHOLVER, *PHALACROCORAX CARBO SINENSIS* (SHAW & NODDER) ALS BROEDVOGEL IN NEDERLAND, IN VERGELIJKING MET ANDERE WESTEUROPESE LANDEN. [THE CORMORANT AS A BREEDING BIRD IN THE NETHERLANDS IN COMPARISON WITH OTHER WEST-EUROPEAN COUNTRIES.] *Limosa* 39(4): 187-212, 1 fig. 1966. In Dutch with English summ. *WR 145: 88*

Cramp, Stanley. GULLS NESTING ON BUILDINGS IN BRITAIN AND IRELAND. *British Birds* 64(11): 476-483, 2 figs. + 3 pls. Nov. 1971. *WR 145: 88*
[32 Queen Court, London, England.]

Devillers, P., G. McCaskie, and J. R. Jehl, Jr. THE DISTRIBUTION OF CERTAIN LARGE GULLS *(LARUS)* IN SOUTHERN CALIFORNIA AND BAJA CALIFORNIA. *Calif. Birds* 2: 11-26. 1971. [From Auk 88(4), 1971.] *WR 145: 88*

Gochfeld, Michael. PREMATURE FEATHER LOSS--A "NEW DISEASE" OF TERNS ON LONG ISLAND, N.Y. *Kingbird* 21(4): 206-211. Oct. 1971. *WR 145: 88*
[Columbia Univ. School Public Health, New York, N.Y.] Common tern, *Sterna hirundo*, chicks three and five weeks of age dropped primary and secondary wing and tail feathers. They appeared normal except for loss of flight feathers. Microscopic examination of the feathers showed the calamus thinned and deformed and some feathers to have broken off at or near the base. The relationship between mercury level and feather loss is statistically significant.

Hair, J. D., and J. C. Holmes. HELMINTHS OF BONAPARTE'S GULLS, *LARUS PHILADELPHIA*, FROM COOKING LAKE, ALBERTA. *Canadian J. Zool.* 48: 1129-1131. 1970. [From Auk 89(1), 1972.] *WR 145: 88*

Hays, Helen, and Mary LeCroy. FIELD CRITERIA FOR DETERMINING INCUBATION STAGE IN EGGS OF THE COMMON TERN. *Wilson Bull.* 83(4): 425-429, 2 figs. Dec. 1971. *WR 145: 88*
[Amer. Mus. Natur. Hist., New York, N.Y.] With drawings, photographs, and descriptions for nine stages in the embryonic development of common terns *(Sterna hirundo)*.--Courtesy/ Paul A. Stewart.

Houston, C. Stuart. RECENT SASKATCHEWAN BANDING OF THE WHITE PELICAN. *Blue Jay* 30(1): 24-26, 2 figs. Mar. 1972. *WR 145: 88*
[863 University Drive, Saskatoon, Saskatchewan, Canada.] Summarization of recoveries of *Pelecanus erythrorhynchos* during the period 1955-1964.

Impekoven, Monica. PRENATAL EXPERIENCE OF PARENTAL CALLS AND PECKING IN THE LAUGHING GULL *(LARUS ATRICILLA L.)*. *Anim. Behav.* 19(3): 475-480, 1 fig. Aug. 1971. *WR 145: 88*
[Rutgers Univ., Newark, N.J.] Abstract: Laughing gulls emit a call referred to as 'crooning' with increasing frequency shortly before the hatching of their

young. Uttered to newly hatched chicks this call appears to enhance pecking for food. The adult birds 'kow' call in response to disturbances near the nest. Incubator raised chicks respond differentially to these two calls, both pre- and post-natally. An experiment was designed to discover whether the hearing of such vocalizations prenatally would have any bearing on their postnatal effectiveness in eliciting pecking. With respect to 'crooning' an effect was found but it would not be clearly demonstrated that 'crooning' heard prenatally enhances pecking. Chicks pecked less often when hearing 'kow' calls regardless of prenatal experience with this call.

Jouventin, Pierre. COMPORTEMENT ET STRUCTURE SOCIALE CHEZ LE MANCHOT EMPEREUR. [BEHAVIOR AND SOCIAL STRUCTURE OF THE EMPEROR PENGUIN.] *Terre & Vie* 118 (4): 510-586, 19 figs. Oct.-Dec. 1971. In French with English summ. *WR 145: 89*

[Lab. Zool., 55 Rue de Buffon, Paris, France.] A study of the ecology, behavioral repertoire and social structure of the emperor penguin *(Aptenodytes forsteri)* was undertaken during the 1969 breeding cycle at Pointe Geologie, Adélie Land (Antarctica). Some 440 banded birds were observed, almost daily. There was a majority of female birds possibly due to greater predation on males. The "fidelity rate" (duration of pair bonding) between mates from one year to the next was low, though some 3- and 4-year pair bondings have been observed. Of the 216 breeding birds observed in 1967 and 1969, only 2% were not present in 1968. Thus the emperor penguin appears to breed annually, in contrast to the king penguin, *Aptenodytes patagonica*.--From summ.

King, W. B. THE TRADE WIND ZONE OCEANOGRAPHY PILOT STUDY. PART VII: OBSERVATIONS OF SEA BIRDS MARCH 1964 TO JUNE 1965. *U.S. Fish Wildl. Serv. Spec. Sci. Rep. Fish.* no. 586. vi + 136 p. 1970. [From Auk 88(4), 1971.] *WR 145: 89*

Kumerloeve, H. DIE SILBERMÖWE, *LARUS ARGENTATUS*, ALS BINNENLAND--BRUTVOGEL IM ÖSTLICHEN KLEINASIEN. [THE HERRING GULL *(LARUS ARGENTATUS)* AS AN INLAND BREEDING BIRD IN THE MIDDLE-EAST.] *Vogelwarte* 25: 47-49. 1969. [From Auk 88(4), 1971. In German.] *WR 145: 89*

McCaskie, G., and S. Suffel. BLACK SKIMMERS AT THE SALTON SEA, CALIFORNIA. *Calif. Birds* 2: 69-71. 1971. [From Auk 89(1), 1972.] *WR 145: 89*

Nehls, H. BEOBACHTUNGEN ZUR AUFZUCHT EINER SCHWARZKOPFMÖWE *(LARUS MELANOCEPHALUS)* DURCH STURMMÖWEN *(LARUS CANUS)* UND ZUM FÜTTERUNGS- UND DROHVERHALTEN DER SCHWARZKOPFMÖWE. [OBSERVATIONS ON THE REARING OF A FEW MEDITERRANEAN BLACK-HEADED GULLS *(LARUS MELANOCEPHALUS)* BY THE COMMON GULL *(LARUS CANUS)* AND ON THE FEEDING AND THREATENING BEHAVIOR OF THE MEDITERRANEAN BLACK-HEADED GULLS.] *Vogelwarte* 25: 130-134. 1969. [From Auk 88(4), 1971. In German.] *WR 145: 89*

Parsons, Jasper. CANNIBALISM IN HERRING GULLS. *British Birds* 64(12): 528-537, 2 figs. + 3 pls. Dec. 1971. *WR 145: 89*

[Fisheries Res. Lab., The Cutts, Coleraine, Londonderry, Northern Ireland.] Summary: A considerable proportion of pre-fledging mortality (23%) in a colony of Herring Gulls *Larus argentatus* on the Isle of May, Fife, was attributed to cannibals seeking chicks as a major food source. Nests situated in less dense parts of the colony were selected by these predators, and the chicks hatched third in a brood succumbed more frequently than those hatched first and second. Within any group, chicks hatching early and late suffered a significantly higher mortality than those hatching in the middle of the season. Therefore, cannibalism tends to select against isolated breeding, while also selecting for nesting synchronization. Cannibals are probably utilising an available source of food without indicating a general food shortage, but could nevertheless reduce recruitment into the population. At a time when its own brood was hatching, one cannibal was unable to distinguish these from chicks which it had collected, indicating a conflict of behavioural drives.

Pomarnacki, Leopold. NOWA KOLONIA MEW ŚMIESZEK *LARUS RIDIBUNDUS* W WOJEWÓDZTWIE KIELECKIM. [A NEW COLONY OF SEA-GULLS, *LARUS RIDIBUNDUS* IN THE PROVINCE OF KIELCE.] *Chrońmy Przyrodę Ojczystą* 27(4): 53-55, 1 fig. July-Aug. 1971. In Polish. *WR 145: 90*

Reid, Brian. AN INTERPRETATION OF THE AGE STRUCTURE AND BREEDING STATUS OF AN ADELIE PENGUIN POPULATION. *Notornis* 15(3): 193-197. Sept. 1968. *WR 145: 90*

Rydén, O. ON THE BEHAVIOUR IN AN ALARM-EVOKING, CONSTANT STIMULUS SITUATION IN A "NATURAL EXPERIMENT." --OBSERVATIONS ON A PAIR OF HERRING GULLS *(LARUS ARGENTATUS)* AND COMMON TERNS *(STERNA HIRUNDO)* BREEDING ON THE SAME ISLET. *J. Ornithol.* 111: 48-53. 1970. [From Auk 88(4), 1971.] *WR 145: 90*
"Larus argentatus and *Sterna hirundo."*

Ryder, R. A. MIGRATION AND MOVEMENTS OF SOME GULLS FROM COLORADO. *Colo. Field Ornithol.* 2: 16-20. 1967. [From Auk 88(4), 1971.] *WR 145: 90*
"Larus delawarensis and *L. californicus."*

Southern, William E. INFLUENCE OF DISTURBANCES IN THE EARTH'S MAGNETIC FIELD ON RING-BILLED GULL ORIENTATION. *Amer. Zool.* 10(3): 23. Aug. 1970. *WR 145: 90*
[Northern Ill. Univ., De Kalb.] *"Larus delawarensis."*

Southern, William E. INFLUENCE OF DISTURBANCES IN THE EARTH'S MAGNETIC FIELD ON RING-BILLED GULL ORIENTATION. *Condor* 74(1): 102-105, 2 figs. Spring 1972. *WR 145: 90*
[Northern Ill. Univ., De Kalb.] Summary: Ring-billed Gull *(Larus delawarensis)* 2-20-day-old chicks from a population at Rogers City, Michigan, were used in 680 orientation-cage trials. The apparently innate ability of chicks to select a southeasterly heading, the appropriate bearing for reaching their winter range, was compared when trials were conducted under various intensities of magnetic disturbance (0-7K, which equals disturbances of 0-200 gamma). During minor disturbances (0-3K) a statistically significant proportion of the experimental birds selected southeasterly headings, but during higher intensity "storms" (4-7K) there was a breakdown in such preferences and no statistically significant mean direction was present for the data. Evidence to date suggests that the mode of orientation used by young Ring-billed Gulls for selecting the direction of fall migration is altered by fluctuations in the earth's magnetic field.

Vermeer, K. BREEDING BIOLOGY OF CALIFORNIA AND RING-BILLED GULLS: A STUDY OF ECOLOGICAL ADAPTATION TO THE INLAND HABITAT. *Canadian Wildl. Serv. Rep. Ser.* no. 12. 52 p. 1970. [From Auk 89(1), 1972.] *WR 145: 90*

Vermeer, K. DISTRIBUTION AND SIZE OF COLONIES OF WHITE PELICANS, *PELECANUS ERITHRORHYNCHOS*, IN CANADA. *Canadian J. Zool.* 48: 1029-1032. 1970. [From Auk 89(1), 1972.] *WR 145: 90*

Warham, John. BREEDING SEASONS AND SEXUAL DIMORPHISM IN ROCKHOPPER PENGUINS. *Auk* 89(1): 86-105, 6 figs. Jan. 1972. *WR 145: 90*
[Univ. Canterbury, Christchurch, New Zealand.] The time of egg-laying in relation to temperature and early differences in body characteristics in relation to sex of *Eudyptes chrysocome* are considered.--Courtesy/ Paul A. Stewart.

Wood, Robert C. POPULATION DYNAMICS OF BREEDING SOUTH POLAR SKUAS OF UNKNOWN AGE. *Auk* 88(4): 805-814. Oct. 1971. *WR 145: 90*
[Md. Acad. Sci., 7 W. Mulberry St., Baltimore.] Pair bonds were maintained from year to year. Breeding success averaged 0.34 fledglings per breeding pair, and annual survival of adults was 93.8%.--Courtesy/ Paul A. Stewart.

Abbott, Jackson M. BALD EAGLE NEST SURVEY 1971. *Atl. Natur.* 26(4): 165-166. Winter 1971. *WR 145: 91*

"Nesting bald eagles in the Chesapeake Bay region had a more productive year in 1971 than in 1970, but not as good as 1969. Of 56 active nests rechecked, 20, or 35.7%, hatched young, compared to 33% in 1970 and 40% in 1969. The 1969 hatch was the most successful since aerial surveys of the nests began in 1962. In that year only 10% of the nests hatched young."

Andersson, G. K. A., and A. Larsson. [THE MARSH HARRIER *CIRCUS AERUGINOSUS* IN SWEDEN.] *Vår Fågelvärld* 30: 99-105. 1971. [From Auk 89(1), 1972. In Swedish with English summ.] *WR 145: 91*

Bécsy, László. ADATOK A KÍGYÁSZÖLYV *(CIRCAETUS GALLICUS* [GM., 1788]*)* TÁPLÁLKOZÁSÁHOZ. [DATA ON THE FOOD OF THE SHORT-TOED EAGLE *(CIRCAETUS GALLICUS* (GM., 1788)*).*] *Állattani Kozl* 58(1-4): 166. 1971. [From Biol. Abstr. 53(2), 1972. In Hungarian with German summ.] *WR 145: 91*

[Budapest, Hungary.]

Brooke, R. K., and C. J. Hodgson. WINTER FOOD OF THE SECRETARYBIRD AS REVEALED BY PELLETS. *Bull. British Ornithol. Club* 91(5): 121-125. Oct. 1971. *WR 145: 91*

"Sagittarius serpentarius."

Brunton, Daniel F., and Ronald Pittaway, Jr. OBSERVATIONS OF THE GREAT GRAY OWL ON WINTER RANGE. *Canadian Field Natur.* 85(4): 315-322, 3 figs. Oct.-Dec. 1971. *WR 145: 91*

[R.R. 3, Rideau Valley Drive, Manotick, Ontario, Canada.] Discussion of home range, field appearance and flight, territorial confrontation, vocalization, hunting behavior, and breeding habitat.

Bunn, D. S. REGULAR DAYLIGHT HUNTING BY BARN OWLS. *British Birds* 65(1): 26-30. Jan. 1972. *WR 145: 91*

[40 Brantfell Rd., Blackburn, Lancashire, England.] *"Tyto alba."*

Catling, Paul M. A BEHAVIORAL ATTITUDE OF SAW-WHET AND BOREAL OWLS. *Auk* 89 (1): 194-196, 1 fig. Jan. 1972. *WR 145: 91*

[104 Victoria Park Ave., Toronto, Ontario, Canada.] Postures during "freezing" by saw-whet and boreal owls *(Aegolius acadicus* and *A. funereus)* are described.--Courtesy/ Paul A. Stewart.

Christensen, Steen, Bent Pors Nielsen, R. F. Porter, and Ian Willis. FLIGHT IDENTIFICATION OF EUROPEAN RAPTORS. PART 2. KITES, BOOTED, BONELLI'S AND SHORT-TOED EAGLES, OSPREY. *British Birds* 64(10): 435-455, 23 figs. + 8 pls. Oct. 1971. *WR 145: 91*

Clark, Richard J. OBSERVATIONS OF NESTING MARSH HAWKS IN MANITOBA. *Blue Jay* 30(1): 43-48, 4 figs. Mar. 1972. *WR 145: 91*

[York Coll. Pa., York.] *"Circus cyaneus hudsonius."*

Colebrook-Robjent, J. F. R. BREEDING OF THE BAT HAWK *MACHEIRHAMPHUS ALCINUS* IN ZAMBIA. *Bull. British Ornithol. Club* 91(6): 151. 20 Dec. 1971. *WR 145: 91*

Collins, Charles T., and Dale R. Thompson. COMMENTS ON THE JUVENILE PLUMAGE OF THE RUFOUS-THIGHED FALCONET. *Bull. British Ornithol. Club* 91(6): 149-150. 20 Dec. 1971. *WR 145: 91*

"Microhierax caerulescens."

Dunstan, Thomas C. A HARNESS FOR RADIO-TAGGING RAPTORIAL BIRDS. *Inland Bird-Banding News* 44(1): 4-8, 1 fig. Jan.-Feb. 1972. *WR 145: 91*

This harness design proved successful for attaching back packages to raptorial birds for long-term studies (20 to 450 days between re-tagging). Fledglings, juveniles, and adults carried packages equally well.--From concl.

Fruziński, Bogusław, and Rajmund Grudziński. ODSTRZAŁ PTAKÓW DRAPIEŻNYCH W WOJEWÓDZTWIE POZNAŃSKIM. [THE SHOT OF THE BIRDS OF PREY IN THE PROVINCE OF POZNAN.] *Chrońmy Przyrodę Ojczystą* 26(2): 10-15, 1 fig. Mar.-Apr. 1970. In Polish with English summ. *WR 145: 92*

Among the 708 predatory birds shot, 473 specimens, i.e. 61.7% proved to belong to the species legally protected. The victims of erroneous shooting were as follows: 333 buzzards, 37 kestrels, 18 kites, 15 harriers (both hen- and Montagu's harriers), 9 owls, 7 hobbies, 4 honey-buzzards and 2 ospreys. The remaining 271 specimens shot, i.e. 38.3% are predatory birds not protected by law.--From summ.

Goslow, George E., Jr. THE ATTACK AND STRIKE OF SOME NORTH AMERICAN RAPTORS. *Auk* 88(4): 815-827, 3 figs. Oct. 1971. *WR 145: 92*

[Northern Ariz. Univ., Flagstaff.] Measurements of velocity, acceleration, and deceleration of the pelvis, legs, and feet of 6 spp. of hawks when attacking prey.--Courtesy/ Paul A. Stewart.

Goslow, George E., Jr. ADAPTIVE MECHANISMS OF THE RAPTOR PELVIC LIMB. *Auk* 89 (1): 47-64, 8 figs. Jan. 1972. *WR 145: 92*

[Northern Ariz. Univ., Flagstaff.] Comparisons of 7 spp. of raptors with the domestic pigeon *(Columba livia)*.--Courtesy/ Paul A. Stewart.

Grubb, Thomas C., Jr. BALD EAGLES STEALING FISH FROM COMMON MERGANSERS. *Auk* 88(4): 928-929. Oct. 1971. *WR 145: 92*

[Rutgers Univ., New Brunswick, N.J.] Bald eagles *(Haliaeetus leucocephalus)* robbed common mergansers *(Mergus merganser)* of fish, chiefly when the fish were a bit larger than usual and difficult to swallow.--Courtesy/ Paul A. Stewart.

Halliwell, W. H. AVIAN POX IN AN IMMATURE RED-TAILED HAWK. *J. Wildl. Dis.* 8 (1): 104-105, 1 fig. Jan. 1972. *WR 145: 92*

[Univ. Mo., Columbia.] Abstract: Cutaneous lesions with the gross morphologic appearance of fowl pox were observed on the feet and lateral aspect of the face of a Red-Tailed Hawk *(Buteo jamaicensis)*. Typical fowl pox inclusion bodies were seen on histologic examination of a biopsy sample from one of the lesions.

Hartwig, E., and G. Vauk. ZUG, RAST UND NAHRUNG DER AUF HELGOLAND DURCHZIEHENDEN WALDOHREULEN *(ASIO OTUS)*. [FLIGHT, REST AND FEEDING ON HELGOLAND OF MIGRANT LONG-EARED OWLS *(ASIO OTUS)*.] *Vogelwarte* 25: 13-19. 1969. [From Auk 88(4), 1971. In German.] *WR 145: 92*

Heintzelman, Donald S. OBSERVATIONS ON THE ROLE OF NEST BOX SANITATION IN AFFECTING EGG HATCHABILITY OF WILD SPARROW HAWKS IN EASTERN PENNSYLVANIA. *Raptor Res. News* 5(3): 100-103. May-June 1971. *WR 145: 92*

[N.J. State Mus., Trenton.] Nest box sanitation is not an important factor in causing embryo mortality in eggs of one population of wild sparrow hawks, *Falco sparverius*.

Hodson, Keith. RESEARCH PLANNING CONFERENCE ON PEREGRINES AND OTHER BIRDS OF PREY / CORNELL UNIVERSITY, ITHACA, NEW YORK, NOVEMBER 7-9, 1969--PART 1. *Raptor Res. News* 5(3): 92-95. May-June 1971. *WR 145: 92*

[Univ. British Columbia, Vancouver, British Columbia, Canada.] Report on a conference about research on birds of prey held at Cornell University November 7-9, 1969. Summaries of papers and discussions presented at the conference are listed.

Holdsworth, Michael. BREEDING BIOLOGY OF BUZZARDS AT SEDBERGH DURING 1937-67. *British Birds* 64(9): 412-420, 2 figs. Sept. 1971. *WR 145: 92*

[27 Leggfield Terrace, Warner's End, Hemel Hempstead, Hertfordshire, England.] *"Buteo buteo."*

Kennedy, Robert Senior. POPULATION DYNAMICS OF OSPREYS IN TIDEWATER VIRGINIA 1970-1971. *M.A. thesis, Coll. William & Mary.* xi + 83 p., 14 figs. Aug. 1971. *WR 145: 93*
"Pandion haliaetus carolinensis."

Korsak, Włodzimierz. ORZEŁ BIELIK W NADLEŚNICTWIE LUBNIEWICE W WOJEWÓDZWIE ZIELONOGÓRSKIM. [THE WHITE-TAILED EAGLE IN THE FOREST DISTRICT OF LUBNIEWICE IN THE PROVINCE OF ZIELONA GORA.] *Chrońmy Przyrodę Ojczystą* 26(5): 58. Sept.-Oct. 1970. In Polish. *WR 145: 93*

Lang, J. R. A SPOTTED EAGLE OWL'S NEST. *Nigerian Ornithol. Soc. Bull.* 6: 101-103. 1969. [From Auk 88(4), 1971.] *WR 145: 93*
"Bubo africanus."

Mallette, Robert D., Sanford Wilbur, W. Dean Carrier, and John C. Borneman. CALIFORNIA CONDOR SURVEY, 1970. *Calif. Fish & Game* 58(1): 67-68. Jan. 1972. *WR 145: 93*
[Calif. Dep. Fish & Game, Sacramento.]

Marti, C. D. DOUBLE BROODS OF THE BARN OWL IN COLORADO. *Colo. Field Ornithol.* 3: 7-8. 1968. [From Auk 88(4), 1971.] *WR 145: 93*
"Tyto alba."

McQueen, Lawrence B. OBSERVATIONS ON COPULATORY BEHAVIOR OF A PAIR OF SCREECH OWLS *(OTUS ASIO).* *Condor* 74(1): 101. Spring 1972. *WR 145: 93*
[448 C Street, Springfield, Oreg.]

Mikkola, Heimo. FOOD OF GREAT GREY OWLS IN THE LAPLAND RESERVE, U.S.S.R. *British Birds* 65(1): 31-32. Jan. 1972. *WR 145: 93*
[Univ. Oulu, Oulu, Finland.] *"Strix nebulosa."*

Mueller, Helmut C. DISPLAYS AND VOCALIZATIONS OF THE SPARROW HAWK. *Wilson Bull.* 83(3): 249-254. Sept. 1971. *WR 145: 93*
[Univ. N.C., Chapel Hill.] Displays and vocalizations of the sparrow hawk *(Falco sparverius)* are described and their functions are discussed.--Courtesy/ Paul A. Stewart.

Nord, I. [THE FALL MIGRATION OF RAPTORS ALONG THE BALTIC COAST, CENTRAL SWEDEN 1963 AND 1964.] *Vår Fågelvärld* 30: 33-44. 1971. [From Auk 89(1), 1972. In Swedish with English summ.] *WR 145: 93*
"Buteo buteo and *Accipiter nisus."*

Olendorff, Richard R. EAGLES, SHEEP AND POWER LINES. *Colo. Outdoors* 21(1): 3-11. Jan.-Feb. 1972. *WR 145: 93*
[Colo. State Univ., Fort Collins.] *"Aquila chrysaetos* and *Haliaeetus leucocephalus."*

Pinel, Harold W., and Clifford A. Wallis. UNUSUAL NESTING RECORD OF RED-TAILED HAWK IN SOUTHERN ALBERTA. *Blue Jay* 30(1): 30-31, 1 fig. Mar. 1972. *WR 145: 93*
[1017 19th Street, Calgary, Alberta, Canada.] A record of a cliffnesting with four downy young plus one "heavily incubated egg."

Porter, Richard D., and Stanley N. Wiemeyer. REPRODUCTIVE PATTERNS IN CAPTIVE AMERICAN KESTRELS (SPARROW HAWKS). *Condor* 74(1): 46-53, 1 fig. Spring 1972. *WR 145: 93*
[Patuxent Wildl. Res. Center, Laurel, Md.] A comparison of egg laying dates of kestrels, *Falco sparverius*, captured in Florida and in the northeastern United States. Time intervals between pairing of previously unpaired kestrels and initiation of their first clutches are also described.

Reese, Jan G. A CHESAPEAKE BARN OWL POPULATION. *Auk* 89(1): 106-114, 2 figs. Jan. 1972. *WR 145: 94*
[St. Michaels, Md.] Nests, eggs, nesting periods, incubation, second nesting attempts, young, stockpiling of food, nesting success, and interspecific contacts for *Tyto alba* are discussed.--Courtesy/ Paul A. Stewart.

Ridpath, M. G. THE WEDGE-TAILED EAGLE. *Australian Natur. Hist.* 16: 209-212. 1969. [From Auk 88(4), 1971.] *WR 145: 94*

Robins, J. D. THE RELATIONSHIP OF FOOD SUPPLY TO THE TIMING OF BREEDING IN AERIAL FORAGERS. *Kans. Ornithol. Soc. Bull.* 21: 9-15. 1970. [From Auk 88(4), 1971.] *WR 145: 94*

Rodríguez-Jiménez, Fernando L., and M. Balcells R. NOTAS BIOLÓGICAS SOBRE EL ALIMOCHE, *NEOPHRON PERCNOPTERUS*, EN EL ALTO ARAGÓN. [BIOLOGICAL NOTES ON THE EGYPTIAN VULTURE *(NEOPHRON PERCNOPTERUS)* IN ALTO ARAGÓN (NORTHERN SPAIN).] *Publ. Centro Pirenaico Biol. Exp.* 2: 159-187, 20 figs. 1968. In Spanish with French and English summ. *WR 145: 94*
General observations, migration, reproduction, rearing of young, feeding, and the behavior of adult *Neophron percnopterus*.

Rossman, George, Allen Rossman, and Bob Rossman. BALD EAGLES OF THE CHIPPEWA FOREST. *Grand Rapids Herald-Review* (Grand Rapids, Minn.). 32 p., illus. Dec. 1971. Price $1.00. *WR 145: 94*
[Grand Rapids Herald-Review, Grand Rapids, Minn.] A survey of information known about *Haliaeetus leucocephalus* supplemented by the authors' observations in Chippewa National Forest.--Courtesy/ C. M. Kirkpatrick.

Rusch, Donald H., and Phillip D. Doerr. BROAD-WINGED HAWK NESTING AND FOOD HABITS. *Auk* 89(1): 139-145, 1 fig. Jan. 1972. *WR 145: 94*
[Manitoba Dept. Mines, Resour. Environ. Mgmt., Winnipeg, Manitoba, Canada.] The nesting density, productivity, and food habits of broad-winged hawks *(Buteo platypterus)* near Rochester, Alberta, Canada are discussed.--Courtesy/ Paul A. Stewart.

Siegfried, W. R. ROADSIDE COUNTS OF RAPTORIAL BIRDS IN THE SANDVELD AREA OF THE SOUTH-WESTERN CAPE. *Ostrich* 39(3): 195-196. Sept. 1968. *WR 145: 94*
[Percy FitzPatrick Inst., Cape Town, South Africa.]

Siegfried, W. R. AFFINITIES OF THE SMALL AFRICAN AND PALAEARCTIC BUTEOS. *Ostrich* suppl. no. 8. p. 41-46. 1970. *WR 145: 94*
[Percy FitzPatrick Inst., Cape Town, South Africa.]

Siegfried, W. R., and D. M. Skead. STATUS OF THE LESSER KESTREL IN SOUTH AFRICA. *Ostrich* 42(1): 1-4. 1971. *WR 145: 94*
[Percy FitzPatrick Inst., Cape Town, South Africa.] *"Falco naumanni."*

Somogyi, Péter. VIZSGÁLATOK A VISEGRÁDIHEGYSÉG RAGADOZÓMADARAIN. [STUDIES OF THE BIRDS OF PREY OF THE VISEGRAD MOUNTAINS.] *Allattani Kozl* 58(1-4): 112-116. 1971. [From Biol. Abstr. 53(2), 1972. In Hungarian with German summ.] *WR 145: 94*
[Budapest, Hungary.] The birds of prey in the area are: *Pernis apivorus, Milvus migrans, Accipiter gentilis, A. nisus, Buteo buteo, Aquila heliaca, Falco cherrug, Hieraaetus pennatus, Bubo bubo* and *Corvus corax*. Because of the exceptionally large numbers of these birds it is believed that this area should be placed under natural protection.

Tomek, Andrzej, and Marek P. Krzemień. ORZEŁ PRZEDNI NA "CZERWONYM BAGNIE". [THE GOLDEN EAGLE IN THE CZERWONE BAGNO (THE RED SWAMP) NATURE RESERVE.] *Chrońmy Przyrodę Ojczystą* 26(2): 39-42, 2 figs. Mar.-Apr. 1970. In Polish. *WR 145: 94*
"Aquila chrysaetos."

Ulfstrand, S. DIE NEUZEITLICHE ÜBERWINTERUNG DES ROTMILANS *MILVUS MILVUS* IN SÜDSCHWEDEN. [RECENT WINTERING OF RED KITES *(MILVUS MILVUS)* IN SOUTHERN SWEDEN.] *J. Ornithol.* 111: 85-93. 1970. [From Auk 88(4), 1971. In German with English summ.] *WR 145: 95*

Between 20 and 40 red kites now winter in southern Sweden, a phenomenon unknown before the late 1950's.

White, Clayton M., and James H. Streater. SURVEY OF RAPTORIAL BIRDS ALONG THE PROPOSED TRANS-ALASKA PIPELINE SYSTEM. *Raptor Res. News* 5(3): 96-99. May-June 1971. *WR 145: 95*

[Brigham Young Univ., Provo, Utah.] Summary of findings of a survey of cliff nesting raptors along the proposed oil pipeline route.

BLACKBIRDS, STARLINGS, CROWS

Allen, J. P., J. H. Hamon, and R. W. McFarlane. SOME STUDIES OF THE SPERMATOZOA OF CERTAIN SPECIES OF ICTERIDAE (BLACKBIRDS). *Proc. Ind. Acad. Sci.* 77: 434-441. 1968. [From Auk 88(4), 1971.] *WR 145: 95*

Arnold, K. A., and D. W. Coon. MODIFICATIONS OF THE CANNON NET FOR USE WITH COWBIRD STUDIES. *J. Wildl. Mgmt.* 36(1): 153-155, 2 figs. Jan. 1972. *WR 145: 95*

[Tex. A&M Univ., College Station.] Abstract: The mobile cannon net was modified by the use of monofilament netting for less weight and the substitution of recoilless rockets for the Dill-type cannon. With this modified mobile net, capture rates for small flocks of brown-headed cowbirds *(Molothrus ater)* averaged 80 percent with no noticeable injuries to the captured birds.

Brown, P. B. BREEDING THE WATTLED STARLING *(CREATOPHORA CARUNCULATA)*. *Avic. Mag.* 77(5): 158-159. Sept.-Oct. 1971. *WR 145: 95*

[Harewood Bird Garden, Leeds, England.]

Coon, Donald W., Robert F. Gotie, and Keith A. Arnold. WINTER NESTING ATTEMPTS BY GREAT-TAILED GRACKLES. *Wilson Bull.* 83(4): 440. Dec. 1971. *WR 145: 95*

[Tex. A&M Univ., College Station.] Female great-tailed grackles *(Cassidix mexicanus)* built nests in Texas during February, but no eggs were laid.--Courtesy/ Paul A. Stewart.

DeHaven, Richard W. BLACKBIRDS AND THE CALIFORNIA RICE CROP. *Rice J.* 74(8). 4-page reprint. Sept. 1971. *WR 145: 95*

[P.O. Box C, Davis, Calif.] Damage by five types of blackbirds and means of control are discussed.

Erskine, Anthony J. SOME NEW PERSPECTIVES ON THE BREEDING ECOLOGY OF COMMON GRACKLES. *Wilson Bull.* 83(4): 352-370, 8 figs. Dec. 1971. *WR 145: 95*

[Canadian Wildl. Serv., Ottawa, Ontario, Canada.] With discussions on distribution, habitat, nest site, egg-laying dates, clutch size, and breeding success of *Quiscalus quiscula*.--Courtesy/ Paul A. Stewart.

Franklin, Raymond. THE BREEDING OF JERDON'S STARLING *(STURNUS BURMANICUS)*. *Avic. Mag.* 78(1): 11-13. Jan.-Feb. 1972. *WR 145: 95*

[Chesham, Buckinghamshire, England.]

Garrido, Orlando H. VARIACIÓN DEL GÉNERO *AGELAIUS* (AVES: ICTERIDAE) EN CUBA. [VARIATION IN THE GENUS *AGELAIUS* (AVES: ICTERIDAE) IN CUBA.] *Poeyana* ser. A, no. 68. p. 1-18. 5 Mar. 1970. In Spanish with English summ. *WR 145: 95*

[Inst. Biol., Havana, Cuba.]

Goddard, Stephen V. SIZE, MIGRATION PATTERN, AND STRUCTURE OF FALL AND EARLY WINTER BLACKBIRD AND STARLING POPULATIONS IN WESTERN OKLAHOMA. *Wilson Bull.* 83 (4): 371-382. Dec. 1971. *WR 145: 96*
[Wis. State Univ., River Falls.] Population size, population structure, and migration pattern are discussed, based on a maximum population of 250,000 birds at the Washita National Wildlife Refuge.--Courtesy/ Paul A. Stewart.

Hagen, H. -O. v. STÄRLINGE UND KÄRPFLINGE ALS EIRÄUBER BEI DER WINKERKRABBE *UCA VOCATOR* (HERBST). [STARLINGS AS EGG-ROBBERS OF THE FIDDLER CRAB *(UCA VOCATOR).*] *Z. Tierpsychol.* 26: 1-6. 1969. [From Auk 89(1), 1972. In German with English summ.] *WR 145: 96*
Quiscalus lugubris in Trinidad.

Hanebrink, Earl L. DILUTE ALBINISM IN A WESTERN MEADOWLARK COLLECTED IN MISSISSIPPI COUNTY, ARKANSAS. *Migrant* 42(4): 82, 85. Dec. 1971. *WR 145: 96*
[Ark. State Univ., State University.] *"Sturnella magna."*

Havlín, Jiří. ŠPAČEK OBECNÝ--STRUČNÝ PŘEHLED PRAKTICKY VÝZNAMNÝCH VÝSLEDKŮ VÝZKUMU V ČSSR. [STARLING *(STURNUS VULGARIS)*--A SHORT INFORMATION ON ITS RESEARCH IN CZECHOSLOVAKIA.] *Vertebr. Zprávy* 1969(3): 97-100. 1969. In Czech with English summ. *WR 145: 96*

Hosono, T. [A STUDY OF THE LIFE HISTORY OF BLUE MAGPIE 6. DISTRIBUTION AND MOVEMENTS IN NAGANO AREA 1.] *Misc. Rep. Yamashina's Inst. Ornithol.* 5: 659-675. 1969. [From Auk 88(4), 1971. In Japanese with English summ.] *WR 145: 96*
"Cyanopica cyana."

Kuroda, N. H. [POST-FLEDGING FAMILY BEHAVIOR IN THE JUNGLE CROW.] *Misc. Rep. Yamashina's Inst. Ornithol.* 5: 640-658, 4 pls. 1969. [From Auk 88(4), 1971. In Japanese with English summ.] *WR 145: 96*
"Corvus levaillanti japonensis."

McCaskie, G. RUSTY BLACKBIRDS IN CALIFORNIA AND WESTERN NORTH AMERICA. *Calif. Birds* 2: 55-68. 1971. [From Auk 89(1), 1972.] *WR 145: 96*
"Euphagus carolinensis."

Munro, J. H. B. SCOTTISH WINTER ROOK ROOST SURVEY--SOUTHERN SCOTLAND. *Scottish Birds* 6(8): 438-443, 1 fig. Winter 1971. *WR 145: 96*

Niedrach, Robert J. BULL SNAKE AND COMMON GRACKLES. *Wilson Bull.* 83(3): 317-318. Sept. 1971. *WR 145: 96*
[Denver Mus. Natur. Hist., Denver, Colo.] A bull snake *(Pituophis* sp.*)* climbed a tree, going directly to the nest of a common grackle *(Quiscalus quiscula).*--Courtesy/ Paul A. Stewart.

Patterson, I. J., G. M. Dunnet, and R. A. Fordham. ECOLOGICAL STUDIES OF THE ROOK, *CORVUS FRUGILEGUS* L., IN NORTH-EAST SCOTLAND. DISPERSION. *J. Appl. Ecol.* 8(3): 815-833, 10 figs. Dec. 1971. *WR 145: 96*
[Culterty Field Sta., Newburgh, Aberdeenshire, Scotland.] Summary: The aim of this paper is to describe the dispersion pattern of rooks in north-east Scotland, as a background to economic and population studies. In a 78,500 ha study area, 18,884 rooks' nests were grouped in rookeries scattered fairly evenly. Birds from these had complex seasonal changes of roosting site and concentrated at very large roosts (up to 65,000 birds) in winter. Marked rooks were seen closest to their rookeries in autumn and winter, their range increasing through spring and summer. Birds from two neighbouring rookeries overlapped in feeding area but were rarely seen near other rookeries in the area. Flock size was larger in winter than in summer, reaching a minimum during the breeding season. Spacing between rooks in flocks and the proportion of birds feeding over 15 m from others, both increased in summer. These various aspects of dispersion all showed the same trend, i.e. towards greatest concentration in winter and greatest spreading out in summer.

Peek, Frank W. SEASONAL CHANGE IN THE BREEDING BEHAVIOR OF THE MALE RED-WINGED BLACKBIRD. *Wilson Bull.* 83(4): 383-395, 4 figs. Dec. 1971. *WR 145: 97*
[Univ. Minn., St. Paul.] Data are presented to show that seasonal changes occur in the behavior of male red-winged blackbirds *(Agelaius phoeniceus)* and that these changes are correlated with seasonal changes in the difficulty the male experiences in maintaining territory.--Courtesy/ Paul A. Stewart.

Power, D. M. STATISTICAL ANALYSIS OF CHARACTER CORRELATIONS IN BREWER'S BLACKBIRDS. *Syst. Zool.* 20: 186-203. 1971. [From Auk 89(1), 1972.] *WR 145: 97*

Radkiewicz, Józef. NIE TEPIĆ GAWRONÓW! [THE ROOKS MUST NOT BE EXTERMINATED!] *Chrońmy Przyrodę Ojczystą* 24(4): 47. July-Aug. 1968. In Polish. *WR 145: 97*

Radwan, A. I., and J. R. Lampky. ENTEROBACTERIACEAE ISOLATED FROM COWBIRDS *(MOLOTHRUS ATER)* AND OTHER SPECIES OF WILD BIRDS IN MICHIGAN. *Avian Dis.* 16(2): 343-350. Jan.-Mar. 1972. *WR 145: 97*
[Wash. State Univ., Pullman.] The prevalence of Enterobacteriaceae was studied in 60 wild birds (45 cowbirds, *Molothrus ater*, and 15 other specimens belonging to 11 other species). The findings emphasized that wild birds, particularly healthy brown-headed cowbirds, may constitute a potential source and reservoir of pathogenic enteric bacteria and may play a role in their transmission to man and susceptible animals.--From summ.

Rowley, Ian. MOVEMENTS AND LONGEVITY OF RAVENS IN SOUTH-EASTERN AUSTRALIA. *CSIRO Wildl. Res.* 16(1): 49-72, 9 figs. Nov. 1971. *WR 145: 97*
[Div. Wildl. Res., CSIRO, Helena Valley, via Midland, Australia.] *Corvus mellori* has a higher mean mortality rate (62.5%) than *C. coronoides* (51.0%), probably due to a more nomadic way of life.--From abstr.

Selwyn, W. BREEDING THE MALABAR STARLING *(STURNUS MALABARICUS)*. *Avic. Mag.* 78(1): 7-8. Jan.-Feb. 1972. *WR 145: 97*
[Llandrindod Wells, Radnorshire, Wales.]

Semple, K. R. BREEDING THE SPOTLESS STARLING *(STURNUS UNICOLOR)*. *Avic. Mag.* 77(5): 166-167. Sept.-Oct. 1971. *WR 145: 97*
[Egham, Surrey, England.]

Stickley, Allen R., Jr., and Joseph L. Guarino. A REPELLENT FOR PROTECTING CORN SEED FROM BLACKBIRDS AND CROWS. *J. Wildl. Mgmt.* 36(1): 150-152. Jan. 1972. *WR 145: 97*
[Patuxent Wildl. Res. Sta., Gainesville, Fla.] Abstract: Methiocarb [4-(methylthio)-3,-5-xylyl *N*-methylcarbamate] was tested as a seed treatment for repelling blackbirds and crows *(Corvus* sp.*)* from sprouting corn in South Carolina. The test was conducted on eight fields within a 0.25-square-mile area. Marked repellency occurred; sprout damage averaged 44 percent in the control fields and 0.3 percent in the fields treated with methiocarb.

Williams, Olwen, and Pat Wheat. HYBRID JAYS IN COLORADO. *Wilson Bull.* 83 (4): 342-346, 1 fig. + 1 pl. Dec. 1971. *WR 145: 97*
[Univ. Colo., Boulder.] *"Cyanocitta cristata* x *C. stellari."*--Courtesy/ Paul A. Stewart.

Williamson, Penelope. ADAPTABILITY AND SITE TENACITY IN AN INDIVIDUAL STARLING. *Condor* 74(1): 108. Spring 1972. *WR 145: 97*
[Chesapeake Bay Center Environ. Studies, Rt. 4, Box 622, Edgewater, Md.] *"Sturnus vulgaris."*

Andrle, Robert F. RANGE EXTENSION OF THE GOLDEN-CROWNED KINGLET IN NEW YORK. *Wilson Bull.* 83(3): 313-316, 1 fig. Sept. 1971. *WR 145: 98*
[Buffalo Mus. Sci., Buffalo, N.Y.] Coincidental with the maturation of artificially planted spruce stands, the golden-crowned kinglet *(Regulus satrapa)* has started nesting in new areas.--Courtesy/ Paul A. Stewart.

Balcells R., E., and F. Ferrer. NOTA SOBRE PETIRROJO, *(ERITHACUS RUBECULA)*, EN SAN JUAN DE LA PEÑA. [NOTES OF THE ROBIN *(ERITHACUS RUBECULA)* IN SAN JUAN DE LA PEÑA.] *Publ. Centro Pirenaico Biol. Exp.* 2: 153-157, 6 figs. 1968. In Spanish with French and English summ. *WR 145: 98*
Nesting and development of the young.

Beesley, J. S. S. FURTHER NOTES ON THE SPIKE-HEELED LARK *CHERSOMANES ALBIFASCIATOR* IN EAST AFRICA. *Bull. British Ornithol. Club* 91: 10-11. 1971. [From Auk 88(4), 1971.] *WR 145: 98*

Bock, Carl E., Harlo H. Hadow, and Preston Somers. RELATIONS BETWEEN LEWIS' AND RED-HEADED WOODPECKERS IN SOUTHEASTERN COLORADO. *Wilson Bull.* 83(3): 237-248, 4 figs. Sept. 1971. *WR 145: 98*
[Univ. Colo., Boulder.] Lewis' and red-headed woodpeckers *(Asyndesmus lewis* and *Melanerpes erythrocephalus)* were interspecifically aggressive and territorial when they had nests close together. This interspecific aggression is considered to result from competition for shared resources.--Courtesy/ Paul A. Stewart.

Bub, H. NAHRUNGSPFLANZEN DES BERGHÄNFLINGS *(CARDUELIS FL. FLAVIROSTRIS)*. [FOOD PLANTS OF THE TWITE *(CARDUELIS FLAVIROSTRIS FLAVIROSTRIS)*.] *Vogelwarte* 25: 134-141. 1969. [From Auk 88(4), 1971. In German.] *WR 145: 98*

Burov, Egbert. ZUM BIOTOP DES SCHWARZSPECHTES *(DRYOCOPUS MARTIUS)* UND DER UFERSCHWALBEN *(RIPARIA RIPARIA)* IN DEN 70er JAHREN. [ON THE BIOTOPE OF THE BLACK WOODPECKER *(DRYOCOPUS MARTIUS)* AND THE BANK SWALLOW *(RIPARIA RIPARIA)* IN THE 1970's.] *Ornithol. Mitteil.* 22(10): 203-204, 1 fig. Oct. 1970. In German. *WR 145: 98*

Calder, William A. TEMPERATURE RELATIONSHIPS AND NESTING OF THE CALLIOPE HUMMINGBIRD. *Condor* 73(3): 314-321, 3 figs. Autumn 1971. *WR 145: 98*
[Univ. Ariz., Tucson.] The calliope hummingbird *(Stellula calliope)* incubates its eggs when exposed to night temperatures near freezing. Nest sites and construction which minimize heat loss are indicated as the major factors in this bird's nesting success.--Courtesy/ Paul A. Stewart.

Capecki, Zenon. DZIECIOŁY W TATRZAŃSKIM PARKU NARODOWYM. [THE WOODPECKERS IN THE TATRA NATIONAL PARK.] *Chrońmy Przyrode Ojczystą* 26(5): 46-48. Sept.-Oct. 1970. In Polish. *WR 145: 98*
"Picoides tridactylus."

Clyde, Dale Peters. ANNA'S HUMMINGBIRD IN ADULT MALE PLUMAGE FEEDS NESTLING. *Condor* 74(1): 102. Spring 1972. *WR 145: 98*
[261 Laurel St., San Francisco, Calif.] *"Calypte anna."*

Davies, S. J. J. F., M. W. R. Beck, and J. P. Kruiskamp. THE RESULTS OF BANDING 154 EMUS IN WESTERN AUSTRALIA. *CSIRO Wildl. Res.* 16(1): 77-79, 1 fig. Nov. 1971. *WR 145: 98*
[Div. Wildl. Res., CSIRO, Helena Valley, via Midland, Australia.]

Dick, James A., and Jon C. Barlow. THE BRAN-COLORED FLYCATCHER IN GUYANA. *Condor* 74(1): 101. Spring 1972. *WR 145: 98*
[Royal Ontario Mus., Toronto, Ontario, Canada.] *"Myiophobus f. fasciatus."*

Dow, Douglas D. AUSTRALIA'S NOISY MINER. *Fauna* no. 3. p. 24-31, illus. May-June 1971. *WR 145: 99*
[Univ. Queensland, Brisbane, Australia.] *"Myzantha melanocephala."*

Dowsett, R. J. BREEDING BIOLOGY OF THE OLIVACEOUS WARBLER *HIPPOLIAS PALLIDA LAENENI*. *Nigerian Ornithol. Soc. Bull.* 6: 107-108. 1969. [From Auk 88(4), 1971.] *WR 145: 99*

Finlay, J. C. POST-BREEDING NEST CAVITY DEFENSE IN PURPLE MARTINS. *Condor* 73 (3): 381-382, 1 fig. Autumn 1971. *WR 145: 99*
[Site 9, R.R. 7, Edmonton, Alberta, Canada.] Post-breeding defense of nest cavities by purple martins *(Progne subis)* is described. The author suggests that this post-breeding defense of nesting cavities may help to imprint upon the birds the location of their nest site.--Courtesy/ Paul A. Stewart.

Finlay, J. Campbell. BREEDING BIOLOGY OF PURPLE MARTINS AT THE NORTHERN LIMIT OF THEIR RANGE. *Wilson Bull.* 83(3): 255-269, 4 figs. Sept. 1971. *WR 145: 99*
[Site 9, R.R. 7, Edmonton, Alberta, Canada.] The incubation period was longer and fledging success higher at Edmonton, Alberta, than at Ann Arbor, Michigan. Males in adult plumage fed young at a rate similar to females, but males in first nuptial plumage fed young at half the rate of females. Males in first nuptial plumage were chiefly responsible for post-breeding defense of the nest cavity.--Courtesy/ Paul A. Stewart.

Frisch, O. v. DIE ENTWICKLUNG DES HÄHERKUCKUCKS *(CLAMATOR GLANDARIUS)* IM NEST DER WIRTSVÖGEL UND SEINE NACHZUCHT IN GEFANGENSCHAFT. [THE DEVELOPMENT OF THE GREAT SPOTTED CUCKOO *(CLAMATOR GLANDARIUS)* IN THE NEST OF HOST BIRDS AND THEIR REARING IN CAPTIVITY.] *Z. Tierpsychol.* 26: 641-650. 1969. [From Auk 89 (1), 1972. In German with English summ.] *WR 145: 99*

Frisch, O. ZUR BRUTBIOLOGIE UND ZUCHT DES SPIESSFLUGHUHNS *(PTEROCLES ALCHATA)* IN GEFANGENSCHAFT. [ON THE BREEDING BIOLOGY AND THE REARING OF SAND GROUSE *(PTEROCLES ALCHATA)* IN CAPTIVITY.] *J. Ornithol.* 111: 189-195. 1970. [From Auk 89(1), 1972. In German with English summ.] *WR 145: 99*

George, U. BEOBACHTUNGEN AN *PTEROCLES SENEGALLUS* UND *PTEROCLES CORONATUS* IN DER NORDWEST-SAHARA. [OBSERVATIONS ON *PTEROCLES SENEGALLUS* AND *P. CORONATUS* IN THE NORTHWEST SAHARA.] *J. Ornithol.* 111: 175-188. 1970. [From Auk 89(1), 1972. In German with English summ.] *WR 145: 99*

Gill, Frank B. TONGUE STRUCTURE OF THE SUNBIRD *HYPOGRAMMA HYPOGRAMMICA*. *Condor* 73(4): 485-486, 1 fig. Winter 1971. *WR 145: 99*
[Acad. Natur. Sci., Philadelphia, Pa.] Courtesy/ Paul A. Stewart.

Goodge, William R. ANATOMICAL EVIDENCE FOR PHYLOGENETIC RELATIONSHIPS AMONG WOODPECKERS. *Auk* 89(1): 65-85, 9 figs. Jan. 1972. *WR 145: 99*
[Univ. Mo., Columbia.] Anatomical study of 33 genera and 47 spp.--Courtesy/ Paul A. Stewart.

Hadley, H. BREEDING BIOLOGY OF THE GRAY-HEADED JUNCO, *JUNCO CANICEPS* (WOODHOUSE) IN THE COLORADO FRONT RANGE. *Colo. Field Ornithol.* 5: 15-21. 1969. [From Auk 88(4), 1971.] *WR 145: 99*

Harrison, C. J. O. NOTES ON THE IDENTIFICATION OF EGGS, EGG MIMICRY AND DISTRIBUTIONAL HISTORY AND THE STATUS OF THE FORM *SERRATUS*, IN THE PARASITIC *CLAMATOR* CUCKOOS. *Bull. British Ornithol. Club* 91(5): 126-131. Oct. 1971. *WR 145: 99*

Heise, G. ZUR BRUTBIOLOGIE DES SEGGENROHRSÄNGERS *(ACROCEPHALUS PALUDICOLA)*. [ON THE BREEDING BIOLOGY OF THE AQUATIC WARBLER *(ACROCEPHALUS PALUDICOLA)*.] *J. Ornithol.* 111: 54-67. 1970. [From Auk 88(4), 1971. In German with English summ.] *WR 145: 99*

Jensen, R. A. C., and C. J. Vernon. ON THE BIOLOGY OF THE DIDRIC CUCKOO IN SOUTHERN AFRICA. *Ostrich* 41: 237-246. 1970. [From Auk 88(4), 1971.] *WR 145: 100*
"Chrysococcyx caprius."

Kepler, Cameron B. FIRST PUERTO RICAN RECORD OF THE ANTILLEAN PALM SWIFT. *Wilson Bull.* 83(3): 309-310. Sept. 1971. *WR 145: 100*
[Edward Grey Inst. Field Ornithol., S. Parks Rd., Oxford, England.] *"Tachornis phoenicobia."*--Courtesy/ Paul A. Stewart.

Kepler, Cameron B., and Kenneth C. Parkes. A NEW SPECIES OF WARBLER (PARULIDAE) FROM PUERTO RICO. *Auk* 89(1): 1-18, 3 figs. + 1 pl. Jan. 1972. *WR 145: 100*
[Edward Grey Inst. Field Ornithol., S. Parks Rd., Oxford, England.] *"Dendroica angelae."*--Courtesy/ Paul A. Stewart.

Knolle, Friedel. HAUSSPERLINGE *(PASSER DOMESTICUS)* ÖFFNEN UND VERZEHREN WALNÜSSE *(JUGLANS REGIA)*. [HOUSE SPARROW *(PASSER DOMESTICUS)* OPENING AND CONSUMING ENGLISH WALNUTS *(JUGLANS REGIA)*.] *Ornithol. Mitteil.* 23(3): 54-55. Mar. 1971. In German. *WR 145: 100*
[Grummetwiese 16, Goslar, Germany.]

Koller, Josef. DIE SCHNEEAMMER *(PLECTROPHENAX NIVALIS)* WINTERGAST IN BAYERN. [THE SNOW BUNTING *(PLECTROPHENAX NIVALIS)* WINTER VISITOR TO BAVARIA.] *Ornithol. Mitteil.* 23(3): 51-52. Mar. 1971. In German. *WR 145: 100*
[Volkerstrasse 75, Munich, Germany.]

Krebs, J. R. REGULATION OF NUMBERS IN THE GREAT TIT (AVES: PASSERIFORMES). *J. Zool.* 162: 317-333. 1970. [From Auk 89(1), 1972.] *WR 145: 100*
"Parus major."

Krebs, J. R. TERRITORY AND BREEDING DENSITY IN THE GREAT TIT, *PARUS MAJOR* L. *Ecology* 52: 2-22. 1971. [From Auk 89(1), 1972.] *WR 145: 100*
Correlated with *"P. caeruleus."*

Kučera, Ladislav. VERBREITUNG DES BIRKENZEISIGS *(CARDUELIS FLAMMEA)* IM GEBIET DES MITTLEREN BÖHMERWALDES. [DISTRIBUTION OF THE COMMON REDPOLL *(CARDUELIS FLAMMEA)* IN THE MIDDLE BOHEMIAN FOREST REGION.] *Ornithol. Mitteil.* 22(12): 251-253. Dec. 1970. In German. *WR 145: 100*
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"Amazona ochrocephala auropalliata and *Pionus m. maximiliani."*

McNeil, Raymond, and André Cyr. EUROPEAN BLACKBIRD *(TURDUS MERULA)* IN QUEBEC. *Auk* 88(4): 919-920. Oct. 1971. *WR 145: 100*
[Univ. Montreal, Montreal, Quebec, Canada.] Courtesy/ Paul A. Stewart.

Meaden, Frank. KEEPING DIPPERS. *Avic. Mag.* 77(5): 171-173. Sept.-Oct. 1971. *WR 145: 100*
[Cheshunt, Hertfordshire, England.] *"Cinclus cinclus."*

Mobbs, A. J. NOTES ON THE REDDISH HERMIT HUMMINGBIRD. *Avic. Mag.* 77(5): 160-163. Sept.-Oct. 1971. *WR 145: 100*
[Walsall, Staffordshire, England.] *"Phaethornis ruber."*

Morrison, James V., and Fred E. Wilson. OVARIAN GROWTH IN TREE SPARROWS *(SPIZELLA ARBOREA)*. *Auk* 89(1): 146-155, 5 figs. Jan. 1972. *WR 145: 100*
[Kans. State Univ., Manhattan.] Development of the ovaries was correlated with photoperiods.--Courtesy/ Paul A. Stewart.

Morton, Eugene S. FOOD AND MIGRATION HABITS OF THE EASTERN KINGBIRD IN PANAMA. *Auk* 88(4): 925-926. Oct. 1971. *WR 145: 101*
[Chesapeake Bay Center Environ. Studies, Route 4, Box 622, Edgewater, Md.] Kingbirds *(Tyrannus tyrannus)* are more numerous in the Panama Canal Zone during the spring migration than during the fall migration, and this difference seems to be associated with differences in food choice. The birds eat insects in the fall and fruit in the spring.--Courtesy/ Paul A. Stewart.

Mull, William P., and Mae E. Mull. SIGHTING OF 'O'U ON KAUAI TRIP. *Elapaio* 32(6): 51-54. Dec. 1971. *WR 145: 101*
"Psittirostra psittacea."

Nakamura, H. [A STUDY OF ANNUAL CYCLE OF POPULATION SIZE, HABITAT SELECTION AND ACTIVITY IN JAPANESE *CHLORIS SINICA*.] *Misc. Rep. Yamashina's Inst. Ornithol.* 5: 623-639. 1969. [From Auk 88(4), 1971. In Japanese with English summ.] *WR 145: 101*

Nothdurft, Wilhelm. DER FLUGGESANG DER AMSEL *(TURDUS MERULA)*. [THE FLIGHT SONG OF THE BLACKBIRD *(TURDUS MERULA)*.] *Ornithol. Mitteil.* 23(3): 47-49. Mar. 1971. In German. *WR 145: 101*
[Rebweg 8, Frickingen, Germany.]

Olsson, V. DIE EXPANSION DES GIRLITZES *(SERINUS SERINUS)* IN NORDEUROPA IN DEN LETZTEN JAHRZEHNTEN. [THE EXPANSION OF THE SERIN *(SERINUS SERINUS)* IN NORTHERN EUROPE DURING RECENT DECADES.] *Vogelwarte* 25: 147-156. 1969. [From Auk 88(4), 1971.] *WR 145: 101*

Oniki, Yoshika. PARENTAL CARE AND NESTING IN THE RUFOUS-THROATED ANTBIRD, *GYMNOPITHYS RUFIGULA*, IN AMAPÁ, BRAZIL. *Wilson Bull.* 83(4): 347-351, 1 fig. Dec. 1971. *WR 145: 101*
[Princeton Univ., Princeton, N.J.] Feeding the young, brooding, breeding season, and molt in the rufous-throated antbird is discussed.--Courtesy/ Paul A. Stewart.

Parker, R. H., and C. W. Benson. VARIATION IN *CAPRIMULGUS TRISTIGMA* RÜPPELL, ESPECIALLY IN WEST AFRICA. (Part II). *Bull. British Ornithol. Club* 91(5): 117-119. Oct. 1971. *WR 145: 101*

Pung, Ernest. THE DIET OF THE 'I'IWI. *Elepaio* 32(7): 61-63. Jan. 1972. *WR 145: 101*
Vestiaria coccinea, endemic Hawaiian bird, has learned to gather nectar from an introduced plant, the banana poka, *Passiflora mollissima*, in a highly original manner and is making extensive use of this food source.

Rheinwald, G., and H. Gutscher. DAS ALTER DER MEHLSCHWALBE *(DELICHON URBICA)* IN RIET. [THE AGE OF HOUSE MARTINS *(DELICHON URBICA)* IN RIET.] *Vogelwarte* 25: 141-147. 1969. [From Auk 88(4), 1971. In German with English summ.] *WR 145: 101*
Breeding adults have a mean life expectancy of 2.5 ± 0.9 years.

Roles, D. G. BREEDING THE GOLD-COAST TOURACO AT THE JERSEY ZOO-PARK *(TURACUS PERSA PERSA)*. *Avic. Mag.* 77(5): 163-165. Sept.-Oct. 1971. *WR 145: 101*

Stiles, F. Gary, and Henry A. Hespenheide. OBSERVATIONS ON TWO RARE COSTA RICAN FINCHES. *Condor* 74(1): 99-101. Spring 1972. *WR 145: 101*
[Amer. Mus. Natur. Hist., New York, N.Y.] *"Acanthidops bairdi* and *Spodiornis rusticus."*

Stolt, B. O., and J. W. Masker. [WINTERING SISKINS *CARDUELIS SPINUS* IN SCANDINAVIA AND FINLAND 1960-61 AND 1961-62.] *Vår Fågelvärld* 30: 84-90. 1971. [From Auk 89(1), 1972. In Swedish with English summ.] *WR 145: 101*

Thurber, Walter A. HOUSE SPARROWS IN GUATEMALA. *Auk* 89(1): 200. Jan. 1972. *WR 145: 102*
[Cornell Lab. Ornithol., Ithaca, N.Y.] House sparrows *(Passer domesticus)* were first found in Guatemala during 1970.--Courtesy/ Paul A. Stewart.

Vader, Wim. DIPPERS FEEDING ON MARINE INVERTERBRATES. *British Birds* 64(10): 456-458. Oct. 1971. *WR 146: 102*
[Biol. Sta. Espegrend, N-5065 Blomsterdalen, Norway.]

Vierke, J. DIE BESIEDLUNG SÜDAFRIKAS DURCH DEN HAUSSPERLING *(PASSER DOMESTICUS)*. [ON THE SPREAD IN SOUTH AFRICA OF THE HOUSE SPARROW *(PASSER DOMESTICUS)*.] *J. Ornithol.* 111: 94-103. 1970. [From Auk 88(4), 1971. In German with English summ.] *WR 145: 102*
Spread was slow for the first 50 years, and then a rapid extension of range took place.

Ward, Bryan S. BREEDING THE ABYSSINIAN GROUND THRUSH AT THE WINGED WORLD *(GEOKICHLA PIAGGIAE PIAGGIAE)*. *Avic. Mag.* 77(5): 168. Sept.-Oct. 1971. *WR 145: 102*
[Heysham, Lancashire, England.]

REPTILES & AMPHIBIANS

Adler, Kraig, and David M. Dennis. NEW TREE FROGS OF THE GENUS *HYLA* FROM THE CLOUD FORESTS OF WESTERN GUERRERO, MÉXICO. *Occas. Pap. Mus. Natur. Hist. Univ. Kans.* no. 7. p. 1-19, 3 figs. + 2 pls. 15 Mar. 1972. In English with Spanish summ. *WR 145: 102*
[Univ. Notre Dame, Notre Dame, Ind.] *"Hyla true* and *H. mykter."*

Anioła, Stefan, and Stanisław Kuśniak. ŻÓŁW BŁOTNY W WIELKOPOLSCE. [THE TORTOISE IN MAJOR POLAND.] *Chrońmy Przyrodę Ojczystą* 24(1): 36-42, 3 figs. Jan.-Feb. 1968. In Polish with English summ. *WR 145: 102*
"Emys orbicularis."

Balasingam, E., and Mohamed-Khan-Bin-Momin-Khan. CONSERVATION OF THE PERAK RIVER TERRAPINS *(BATAGUR BASKA)*. *Malayan Natur. J.* 23(1): 27-29. 1969/1970. [From Biol. Abstr. 53(2), 1972.] *WR 145: 102*
[Univ. Malaya, Kuala Lumpur, Malaysia.]

Ballinger, Royce Eugene. COMPARATIVE DEMOGRAPHY OF TWO VIVIPAROUS LIZARDS *(SCELOPORUS JARROVI* AND *SCELOPORUS POINSETTI)* WITH CONSIDERATION OF THE EVOLUTIONARY ECOLOGY OF VIVIPARITY IN LIZARDS. *Ph.D. thesis, Tex. A&M Univ.* 116 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(8), 1972.] *WR 145: 102*

Bannikov, A. G., and N. N. Drozdov. [NEW DATA ON FINDINGS OF THE FAR-EASTERN SKINK *EUMECES LATISCUTATUS*, HALLOWELL, 1860 (REPTILIA, SCINCIDAE) IN THE PRIMOR'E.] *Byull. Mosk. Obshchest. Ispyt. Prir. Otd. Biol.* 76(2): 86-88. 1971. [From Biol. Abstr. 53(1), 1972. In Russian with English summ.] *WR 145: 102*

Boice, Robert, and Richard C. Williams. COMPETITIVE FEEDING BEHAVIOUR OF *RANA PIPIENS* AND *RANA CLAMITANS*. *Anim. Behav.* 19(3): 548-551, 2 figs. on 1 pl. Aug. 1971. *WR 145: 102*
[Univ. Mo., Columbia.] Abstract: Feeding hierarchies based on competition for mealworms were reliably stable over forty-five sessions in three groups of leopard frogs *(Rana pipiens)* and in three groups of green frogs *(Rana clamitans)*. Green frogs most commonly wrestled during competition and were markedly more vigorous than leopard frogs. Both species displayed tongue lashing and nipping in competition but neither these nor wrestling related in an obvious fashion to position in the feeding hierarchy.

Bourgat, Robert M. BIOGEOGRAPHICAL INTEREST OF *CHAMAELEO PARDALIS* CUVIER, 1829 (REPTILIA, SQUAMATA, CHAMAELEONIDAE) ON REUNION ISLAND. *Herpetologica* 28 (1): 22-24. Mar. 1972. *WR 145: 103*

[Univ. Benin, B.P. 1515, Lomé, Togo.] Abstract: The herpetological fauna of Reunion Island is poor and probably of recent derivation. Such is the case for *Chamaeleo pardalis* Cuvier, 1829. Its introduction may be explained by three factors: transport by men, ease of indigenation and absorption capacity of the biotope. Its localization around the pond of St. Paul is probably the result of human and ecological factors. The study of this population shows that the rigorous insularity favors parasitic defaunation and monomorphism. Morphological similarities between chamaeleons of the Comora Islands, Nossi-Bé and Reunion Island demonstrate the existence of an insular form.

Brisbin, I. Lehr, Jr. SEASONAL VARIATIONS IN THE LIVE WEIGHTS AND MAJOR BODY COMPONENTS OF CAPTIVE BOX TURTLES. *Herpetologica* 28(1): 70-75, 1 fig. Mar. 1972. *WR 145: 103*

[Savannah River Ecol. Lab., P.O. Drawer E, Aiken, S.C.] Abstract: Seasonal variations in live body weights and major body components were recorded for captive box turtles maintained in an outdoor pen near Athens, Georgia. Data collected over a two-year period indicated that there were no significant differences in the times of emergence from winter dormancy by either adult males, females or juvenile turtles. There were no significant differences in body weight attributable to sex at any season of the year. Analyses of variance indicated that there were no significant effects of season on the average live body weights of either males, females or juveniles. Biomass analyses of 12 adult turtles indicated no significant effect of season on either total body water or total body fat reserves. Fat indices of the box turtles, like those reported for other species of temperate-zone reptiles and amphibians, were much lower than those reported for temperate-zone migratory birds.

Broadley, Donald G. A REVISION OF THE AFRICAN SNAKE GENUS *ELAPSOIDEA* BOCAGE (ELAPIDAE). *Occas. Pap. Nat. Mus. Rhodesia* B 4(32): 577-626, 12 figs. 1971. *WR 145: 103*

[Umtali Mus., Rhodesia.]

Broadley, Donald G. A REVISION OF THE AFRICAN SNAKE GENERA *AMBLYODIPSAS* AND *XENOCALAMUS* (COLUBRIDAE). *Occas. Pap. Nat. Mus. Rhodesia* B 4(33): 629-697, 22 figs. 1971. *WR 145: 103*

[Umtali Mus., Rhodesia.]

Burghardt, Gordon M., and John P. Abeshaheen. RESPONSES TO CHEMICAL STIMULI OF PREY IN NEWLY HATCHED SNAKES OF THE GENUS *ELAPHE*. *Anim. Behav.* 19(3): 486-489, 2 figs. Aug. 1971. *WR 145: 103*

[Univ. Tenn., Knoxville.]

Burnley, John M. LATE DATE RECORDS OF AMPHIBIANS AND REPTILES ON LONG ISLAND. *Engelhardtia* 4(3): 17-22. Sept. 1971. *WR 145: 103*

[296 Jerome Ave., Carle Place, Long Island, N.Y.]

Cale, William G., Jr., and J. Whitfield Gibbons. RELATIONSHIPS BETWEEN BODY SIZE, SIZE OF THE FAT BODIES, AND TOTAL LIPID CONTENT IN THE CANEBRAKE RATTLESNAKE *(CROTALUS HORRIDUS)* AND THE BLACK RACER *(COLUBER CONSTRICTOR)*. *Herpetologica* 28(1): 51-53. Mar. 1972. *WR 145: 103*

[Savannah River Ecol. Lab., P.O. Drawer E, Aiken, S.C.] Abstract: The statistical relationships between wet and dry body weights, wet and dry weights of the fat bodies, and lipid content of the fat bodies and of the entire body were determined for the canebrake rattlesnake *(Crotalus horridus)* and the black racer *(Coluber constrictor)*. The results indicate highly significant correlations between certain variables. The most useful relationship is that total lipid content can be confidently estimated once the wet weight of the paired fat bodies is determined.

Case, Ted J. THERMOREGULATION AND EVAPORATIVE COOLING IN THE CHUCKWALLA, *SAUROMALUS OBESUS*. *Copeia* 1972(1): 145-150, 3 figs. 8 Mar. 1972. *WR 145: 104*
[Univ. Calif., Irvine.]

Chiu, K. W., and W. G. Lynn. OBSERVATIONS ON THYROIDAL CONTROL OF SLOUGHING IN THE GARTER SNAKE, *THAMNOPHIS SIRTALIS*. *Copeia* 1972(1): 158-163. 8 Mar. 1972. *WR 145: 104*
[Chung Chi Coll., Chinese Univ., Hong Kong.]

Clarke, Raymond D. THE EFFECT OF TOE CLIPPING ON SURVIVAL IN FOWLER'S TOAD *(BUFO WOODHOUSEI FOWLERI)*. *Copeia* 1972(1): 182-185, 2 figs. 8 Mar. 1972. *WR 145: 104*
[Yale Univ., New Haven, Conn.]

Combes, Claude, and Louis-Philippe Knoepffler. LES AMPHIBIENS ET LE MILIEU. [AMPHIBIANS AND THE ENVIRONMENT.] *Vie Milieu Ser. C Biol. Terr.* 21(1): 159-173. 1970. [From Biol. Abstr. 53(1), 1972. In French with German and English summ.] *WR 145: 104*
[C.S.U., 66-Perpignan, France.]

Cooper, J. E., and P. Nares. CLINICAL AND POST-MORTEM EXAMINATION OF SNAKES AT THE NAIROBI SNAKE PARK. *East African Wildl. J.* 9. p. 166-170. Aug. 1971. *WR 145: 104*
[P.O. Kabete, Kenya.]

Cooper, William E., Jr., and Gary W. Ferguson. RELATIVE EFFECTIVENESS OF PROGESTERONE AND TESTOSTERONE AS INDUCTORS OF ORANGE SPOTTING IN FEMALE COLLARED LIZARDS. *Herpetologica* 28(1): 64-65. Mar. 1972. *WR 145: 104*
[Kans. State Univ., Manhattan.] *"Crotaphytus collaris."*

Cruz, Jorge de la. LOS ACAROS DE LA SUBFAMILIA LAWRENCARINAE (ACARI: EREYNETIDAE) PARÁSITOS DE LOS BATRACIOS DE CUBA. [THE ARACHNIDS OF THE SUBFAMILY LAWRENCARINAE (ACARI: EREYNETIDAE) PARASITES OF THE BATRACIANS OF CUBA.] *Poeyana* no. 86. 9 p., 2 figs. 13 May 1971. In Spanish with English summ. *WR 145: 104*
[Inst. Biol., Acad. Cienc., Havana, Cuba.]

Cuellar, Hector S., Jan J. Roth, James D. Fawcett, and Richard E. Jones. EVIDENCE FOR SPERM SUSTENANCE BY SECRETIONS OF THE RENAL SEXUAL SEGMENT OF MALE LIZARDS, *ANOLIS CAROLINENSIS*. *Herpetologica* 28(1): 53-57. Mar. 1972. *WR 145: 104*
[Univ. Colo., Boulder.]

Dixon, James R., Chesley A. Ketchersid, and Carl S. Lieb. THE HERPETOFAUNA OF QUERETARO, MEXICO, WITH REMARKS ON TAXONOMIC PROBLEMS. *Southwest. Natur.* 16 (3&4): 225-237, 1 fig. 18 Feb. 1972. *WR 145: 104*
[Tex. A&M Univ., College Station.]

Dmi'el, R. RELATION OF METABOLISM TO BODY WEIGHT IN SNAKES. *Copeia* 1972(1): 179-181, 1 fig. 8 Mar. 1972. *WR 145: 104*
[Tel-Aviv Univ., Tel Aviv, Israel.]

Dole, Jim W. HOMING AND ORIENTATION OF DISPLACED TOADS, *BUFO AMERICANUS*, TO THEIR HOME SITES. *Copeia* 1972(1): 151-158, 5 figs. 8 Mar. 1972. *WR 145: 104*
[San Fernando Valley State Coll., Northridge, Calif.] Abstract: A field study of movements of displaced adult *Bufo americanus* was conducted using a trailing device to follow the animals. Normal toads, after displacements up to 235 m, were able to orient generally homeward, but many animals returned to their former sites by indirect routes, moving first to a shoreline, then turning more directly homeward. Normal toads under both clear skies and complete cloud cover showed similar orientational ability. Neither blinding nor ablation of the olfactory tracts appreciably altered the animals' ability to home successfully. The specific sense involved in orientation was not identified.

Donavan, Lois A., and George W. Folkerts. FOODS OF THE SEEPAGE SALAMANDER, *DESMOGNATHUS AENEUS* BROWN AND BISHOP. *Herpetologica* 28(1): 35-37. Mar. 1972. *WR 145: 105*
[Auburn Univ., Auburn, Ala.]

Duellman, William E., and M. J. Fouquette, Jr. MIDDLE AMERICAN FROGS OF THE *HYLA MICROCEPHALA* GROUP. *Univ. Kans. Publ. Mus. Natur. Hist.* 17(12): 517-557, 9 figs. 4 pls. 20 Mar. 1968. *WR 145: 105*

Du[illegible]l, William A., and Gary W. Ehlert. EFFECTS OF TEMPERATURE, SALINITY, AND SURFACE WATER FLOW ON DISTRIBUTION OF THE SEA SNAKE *PELAMIS*. *Limnol. & Oceanogr.* 16(6): 845-853, 4 figs. Nov. 1971. *WR 145: 105*
[Pa. State Univ., University Park.]

Emery, Alan R., Alfred H. Berst, and Kakuya Kodaira. UNDER-ICE OBSERVATIONS OF WINTERING SITES OF LEOPARD FROGS. *Copeia* 1972(1): 123-126, 2 figs. 8 Mar. 1972. *WR 145: 105*
[Ontario Dep. Lands & Forests, Res. Branch, Maple, Ontario, Canada.] Abstract: Leopard frogs *(Rana pipiens* Schreber*)* hibernating in an ice-covered pond in Ontario, Canada, were found to rest in small pits apparently excavated by the frogs. Frogs were sometimes lightly covered with silt and all were capable of some movement including swimming. This habit keeps the frogs from being buried in anoxic mud, but increases their exposure to predation by fish, such as trout. Observations were made using SCUBA under the ice.

Fitch, Henry S. ECOLOGY OF *ANOLIS TROPIDOLEPIS* IN COSTA RICAN CLOUD FOREST. *Herpetologica* 28(1): 10-21, 6 figs. Mar. 1972. *WR 145: 105*
[Univ. Kans., Lawrence.] Study methods; range, habitat and associates; description; behavior; temperature relationships; spatial relationships; growth; food habits; molt; and reproduction of *Anolis tropidolepis* are the major topics of discussion.

Frair, Wayne. TAXONOMIC RELATIONS AMONG CHELYDRID AND KINOSTERNID TURTLES ELUCIDATED BY SEROLOGICAL TESTS. *Copeia* 1972(1): 97-108, 2 figs. 8 Mar. 1972. *WR 145: 105*
[King's Coll., Briarcliff Manor, N.Y.]

Garton, John S. COURTSHIP OF THE SMALL-MOUTHED SALAMANDER, *AMBYSTOMA TEXANUM*, IN SOUTHERN ILLINOIS. *Herpetologica* 28(1): 41-45. Mar. 1972. *WR 145: 105*
[Southern Ill. Univ., Carbondale.] Abstract: Laboratory and field observations on the courtship of *Ambystoma texanum* from southern Illinois show that (1) males are stimulated to court by the presence of gravid females, (2) stimulated males will court other males, (3) females may be simultaneously courted by several males, (4) several males deposit a large number of spermatophores in a small area (4 ft^2), (5) females move into the spermatophore field and mount numerous spermatophores, and (6) males do not amplex females nor lead them forward over spermatophores. The courtship of *A. texanum* is similar to that of *A. maculatum* and *A. annulatum*.

Glass, James K. FEEDING BEHAVIOR OF THE WESTERN SHOVEL-NOSED SNAKE, *CHIONACTIS OCCIPITALIS KLAUBERI*, WITH SPECIAL REFERENCE TO SCORPIONS. *Southwest. Natur.* 16(3&4): 445-447. 18 Feb. 1972. *WR 145: 105*
[Bur. Sport Fisheries & Wildl., Phoenix, Ariz.]

Greene, Harry W., and Jonathan A. Campbell. NOTES ON THE USE OF CAUDAL LURES BY ARBOREAL GREEN PIT VIPERS. *Herpetologica* 28(1): 32-34, 1 fig. Mar. 1972. *WR 145: 105*
[Univ. Tex., Arlington.] Abstract: An adult arboreal green pit viper, *Bothrops bilineatus* from South America, twitched its pink tail in the presence of lizards. Successful luring of one anole was observed. Advantages of caudal luring to this species are discussed. We argue that the red tail of at least one Old World pit viper is related to a stress-provoked protective tail display.

Greer, Allen E., Jr. CROCODILIAN NESTING HABITS AND EVOLUTION. *Fauna* no. 2. p. 20-28, illus. Mar.-Apr. 1971. *WR 145: 106*
[Harvard Mus. Comp. Zool., Cambridge, Mass.] Type of nest, habitat, distribution and evolutionary relationships of the 21 living species of crocodilians.

Groves, Frank, and John D. Groves. KERATOPHAGY IN SNAKES. *Herpetologica* 28 (1): 45-46. Mar. 1972. *WR 145: 106*
[Baltimore Zoo, Baltimore, Md.] "From the evidence at hand, it appears that keratophagy in snakes is a mere quirk, possibly influenced by reptile-eating tendencies, rather than a well-developed habit. The fact that none of the snakes involved repeated the act while under our observation tends to support this view."

Hedeen, Stanley E. POSTMETAMORPHIC GROWTH AND REPRODUCTION OF THE MINK FROG, *RANA SEPTENTRIONALIS* BAIRD. *Copeia* 1972(1): 169-175, 5 figs. 8 Mar. 1972. *WR 145: 106*
[Xavier Univ., Cincinnati, Ohio.] Abstract: Postmetamorphic growth of *Rana septentrionalis* in Minnesota was determined. The ratio of snout-vent length to tympanum diameter was used for sex recognition. Transformation occurred during July and August. Males became sexually mature when about 45 to 50 mm long *ca.* one year after transformation. Females became sexually mature when about 54 to 59 mm long either one or two years after transformation. Male choruses were audible from late May through early August. Males in a breeding habitat shifted locations during the summer calling period. Females spent less time at a breeding site than did males. All breeding occurred at night from late June through early August.

Jackson, Crawford G., Jr., and John D. Davis. A QUANTITATIVE STUDY OF THE COURTSHIP DISPLAY OF THE RED-EARED TURTLE, *CHRYSEMYS SCRIPTA ELEGANS* (WIED). *Herpetologica* 28(1): 58-64, 1 fig. Mar. 1972. *WR 145: 106*
[Miss. State Coll. Women, Columbus.] Abstract: The courtship display of the red-eared turtle, *Chrysemys scripta elegans* (Wied), was analyzed by high-speed videotape and photographic procedures. An ethogram of courtship behavior was constructed. Fixed action patterns involving the forelimbs and foreclaws of the male were identified and quantified. Three major components of the display are recognized: signaling posture, bout, and titillation sequence. The signaling posture may or may not precede a bout of display and is variable in duration. The bout consists of a complex, stereotyped series of movements in which the male's forelimbs are brought parallel to the female's head and the claws of the forepaws are drummed and vibrated against the eyes and interocular region of the female. These movements were resolved into seven motor patterns which were defined, quantified, and organized into temporal sequences. The titillation sequence is composed of a variable number of bouts and may or may not be preceded by the signaling posture. The number of bouts in titillation sequences followed by attempted mounting varies greatly.

Kasperczyk, Maria. COMPARATIVE STUDIES ON COLOUR SENSE IN AMPHIBIA *(RANA TEMPORARIA* L.*) SALAMANDRA SALAMANDRA* L. AND *TRITURUS CRISTATUS* LAUR. *Folia Biol.* (Krakow) 19(2): 241-288, illus. 1971. [From Biol. Abstr. 53(2), 1972. In English with Polish and Russian summ.] *WR 145: 106*
[Jagellonian Univ., Cracow, Poland.]

Kay, Fenton R. ACTIVITY PATTERNS OF *CALLISAURUS DRACONOIDES* AT SARATOGA SPRINGS, DEATH VALLEY, CALIFORNIA. *Herpetologica* 28(1): 65-69, 1 fig. Mar. 1972. *WR 145: 106*
[N. Mex. State Univ., Las Cruces.] Abstract: Seasonal and diel activity of *Callisaurus draconoides* were studied at Saratoga Springs, Death Valley National Monument, California. The species was active from February through October, with maximum numbers active during summer (May-July). Immature lizards were active slightly earlier than adults. Phenology of creosote bush was observed to be a reliable indicator of commencement of activity of *C. draconoides* in the

spring. Diel activity varied seasonally. Daily activity in all seasons commenced at T_a 25 C. Spring and autumn patterns of activity were unimodal and summer was bimodal but without a midday cessation of activity. The summer diel pattern differs from other desert lizards and suggests that *C. draconoides* occupies an otherwise empty temporal niche.

Keiser, Edmund D. THE POISONOUS SNAKES OF LOUISIANA AND THE EMERGENCY TREATMENT OF THEIR BITES. *La. Wild Life & Fisheries Comm.* 16 p., 3 figs. 1971. *WR 145: 107*
[Univ. Southwestern La., Hammond.] Six poisonous snakes discussed are: cottonmouth, *Agkistrodon piscivorus*; copperhead, *Agkistrodon contortrix*; pigmy rattlesnake, *Sistrurus miliarius*; canebrake rattlesnake, *Crotalus horridus*; eastern diamondback rattlesnake, *Crotalus adamanteus*; and the eastern coral snake, *Micrurus fulvius*.

Kryger, Maciej, and Tomasz Kutzner. ROPUCHA PASKÓWKA *BUFO CALAMITA* LAUR. W IŁOWIE W WOJEWÓDZTWIE BYDGOSKIM. [THE TOAD *BUFO CALAMITA* LAUR. AT IŁOWO IN THE PROVINCE OF BYDGOSZCZ.] *Chrońmy Przyrodę Ojczystą* 27(5): 56-58. Sept.-Oct. 1971. In Polish. *WR 146: 107*

Kuramoto, Mitsuru. LOW NATURAL FERTILIZATION RATE IN *HYNOBIUS TSUENSIS* ABE (AMPHIBIA: URODELA). *Herpetologica* 28(1): 38-41, 2 figs. Mar. 1972. *WR 145: 107*
[Fukuoka Univ., Munakata, Fukuoka, Japan.] Abstract: Fertilization rate of *Hynobius tsuensis* Abe is remarkably low, below 40% in 5 of 8 populations examined. It differs from population to population and from year to year. Low fertility is probably inherent in *H. tsuensis* itself and not due to external influences.

Lawson, Ronald, David B. Wake, and Nancy T. Beck. TOOTH REPLACEMENT IN THE RED-BACKED SALAMANDER, *PLETHODON CINEREUS*. *J. Morphol.* 134(3): 259-270, illus. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 107*
[Univ. Salford, Lancashire, England.]

León, Juan R. THE SYSTEMATICS OF THE FROGS OF THE *HYLA RUBRA* GROUP IN MIDDLE AMERICA. *Univ. Kans. Publ. Mus. Natur. Hist.* 18(6): 505-545, 7 figs. + 4 pls. 2 Dec. 1969. *WR 145: 107*

Lowe, Charles H., Michael D. Robinson, and Vincent D. Roth. A POPULATION OF *PHRYNOSOMA DITMARSI* FROM SONORA, MEXICO. *J. Ariz. Acad. Sci.* 6(4): 275-277, illus. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 107*
[Univ. Ariz., Tucson.]

Mahoney, J. J., and V. H. Hutchison. PHOTOPERIOD ACCLIMATION AND 24-HOUR VARIATIONS IN THE CRITICAL THERMAL MAXIMA OF A TROPICAL AND A TEMPERATE FROG. *Oecologia* 2: 143-161, 2 figs. 1969. *WR 145: 107*
[Univ. R.I., Kingston.]

Markiewicz, Józef. GADY PÓŁNOCNEJ CZĘŚCI WYŻYNY KRAKOWSKO-CZĘSTOCHOWSKIEJ I ICH OCHRONA. KRÓTKI OPIS ŚRODOWISK. [THE REPTILES IN THE NORTHERN PART OF THE CRACOW-CZĘSTOCHOWA UPLAND AND ITS PROTECTION.] *Chrońmy Przyrodę Ojczystą* 24(1): 59-61. Jan.-Feb. 1968. In Polish. *WR 145: 107*

Martin, A. A., and A. K. Cooper. THE ECOLOGY OF TERRESTRIAL ANURAN EGGS, GENUS *CRINIA* (LEPTODACTYLIDAE). *Copeia* 1972(1): 163-168, 3 figs. 8 Mar. 1972. *WR 145: 107*
[Univ. Melbourne, Parkville, Victoria, Australia.] Abstract: Eggs of the leptodactylid anuran *Crinia victoriana* are laid in tightly packed clumps in humid situations on land. Larvae in their egg capsules can survive on land for up to four months. The eggs lose water freely by evaporation, most of which comes from the capsule and not from the larva. The weight of hydrated eggs can be reduced by 90% without affecting larval viability. The larvae are ureotelic,

in contrast to the ammonotelism characteristic of most anuran larvae, and this presumably contributes to prolonging the period of terrestrial development. The choice of oviposition site, form of egg mass, structure of egg capsule and amount of yolk in the egg are other important factors relevant to the terrestrial survival of larvae.

McNicholl, Martin K. AN OBSERVATION OF APPARENT DEATH-FEIGNING BY A TOAD. *Blue Jay* 30(1): 54-55, 1 fig. Mar. 1972. *WR 145: 108*
[Univ. Alberta, Edmonton, Alberta, Canada.] *"Bufo hemiophrys."*

Mertens, Robert. UNERWARTETE BANANENFRESSER UNTER REPTILIEN. [UNEXPECTED BANANA EATING BY REPTILES.] *Salamandra* 7(1): 39-40. 1971. [From Biol. Abstr. 53(2), 1972. In German with English summ.] *WR 145: 108*
[Naturmus., Forschunginst., Senckenberg, Senckenberg-Anlage 25, Frankfurt, Germany.]

Muskhelishvili, T. A. [SEASONAL AND DAILY ACTIVITY OF THE ASP, *VIPERA LEBETINA OBTUSA* DW. IN EASTERN GEORGIA.] *Soobshch. Akad. Nauk Gruz. SSSR* 61 (1): 201-203. 1971. [From Biol. Abstr. 53(1), 1972. In Russian with English summ.] *WR 145: 108*
The seasonal activity mainly begins in the second half of Feb. or March and continues until Nov., although, exceptionally, this reptile may be encountered in the winter months as well. Its day-time activity varies according to the seasons: in the spring months and in June it is both a day-time and a twilight reptile; in July and Aug. and partly in Sept. this reptile leads a twilight- and day-time mode of life; and in Oct. and Nov. it again assumes a daytime mode of life. The most favorable air temperature for the asp is 20-26 C; below 28 C it hides in its hole. It falls into an inactive state below 15 C. Its maximum body temperature does not exceed 35 C.

Nelson, Craig E., and R. R. Humphrey. ARTIFICIAL INTERSPECIFIC HYBRIDIZATION AMONG *AMBYSTOMA*. *Herpetologica* 28(1): 27-32. Mar. 1972. *WR 145: 108*
[Ind. Univ., Bloomington.]

Pianka, Eric R. ZOOGEOGRAPHY AND SPECIATION OF AUSTRALIAN DESERT LIZARDS: AN ECOLOGICAL PERSPECTIVE. *Copeia* 1972(1): 127-145, 10 figs. 8 Mar. 1972. *WR 145: 108*
[Univ. Tex., Austin.] Geographic distributions of 94 spp. of Australian desert lizards are compared and 72 of these ranges are classified into eight biogeographic categories: ubiquitous (7 spp.), northern (8 spp.), southern (10 spp.), eremaen (6 spp.), central relicts (6 or 7 spp.), sandridges (8 spp.), shrub-*Acacia* (16 spp.), and sandplain-*Triodia* (10 spp.). Habitat specificity in nearly half these species has been well documented. Various routes by which habitat-restricted lizards could disperse between subregions of the desert are described and discussed. Points of habitat juncture are described, and it is suggested that several fairly localized regions have played major roles in both the speciation and the movements of habitat-restricted Australian desert lizards. A model of speciation based upon habitats fluctuating in space and time is proposed and discussed.--From abstr.

Polunin, Nicholas. VEGETATION AND THE ANIMAL HABITAT. *Natur. Canadian* 98 (3): 515-528. 1971. [From Biol. Abstr. 53(1), 1972. In English with French summ.] *WR 145: 108*
[Geneva, Switzerland.] Consideration of plant-animal relationships in a number of northern-hemisphere ecosystems illustrates a high degree of interdependence and areal correspondence in which vegetation engenders and conditions animal habitats. The degradation of these relationships as a result of an ever-increasing human population is discussed in terms of man's own survival.

Prestt, Ian. AN ECOLOGICAL STUDY OF THE VIPER *VIPERA BERUS* IN SOUTHERN BRITAIN. *J. Zool.* (London) 164(3): 373-418, illus. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 108*
[Furzebrook Res. Sta., Wareham, Dorset, England.]

Purdue, James R., and Charles C. Carpenter. A COMPARATIVE STUDY OF THE BODY MOVEMENTS OF DISPLAYING MALES OF THE LIZARD GENUS *SCELOPORUS* (IGUANIDAE). *Behaviour* 41(1-2): 68-81, 6 figs. 1972. In English with French summ. *WR 145: 109*
[Univ. Okla., Norman.]

Rivero, Juan A. TRES NUEVOS RECORDS Y UNA NUEVA ESPECIE DE ANFIBIOS DE VENEZUELA. [THREE NEW FROG RECORDS AND A NEW SPECIES ARE REPORTED FROM VENEZUELA.] *Caribbean J. Sci.* 11(1/2): 1-9, illus. 1971. [From Biol. Abstr. 53 (2), 1972. In Spanish with English summ.] *WR 145: 109*
[Univ. Puerto Rico, Mayagues, Puerto Rico.] *"Hyla minuscula, H. landiformis guerreroi, Leptodactylus longirostris,* and *Osteocephalus leprieurii."*

Roth, Vincent D. FOOD HABITS OF DITMARS' HORNED LIZARD WITH SPECULATION ON ITS TYPE LOCALITY. *J. Ariz. Acad. Sci.* 6(4): 278-281. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 109*
[Southwest. Res. Sta., Portal, Ariz.] *"Phrynosoma ditmarsi."*

Sexton, Owen J., Joan Bauman, and Edward Ortleb. SEASONAL FOOD HABITS OF *ANOLIS LIMIFRONS*. *Ecology* 53(1): 182-186, 5 figs. Winter 1972. *WR 145: 109*
[Washington Univ., St. Louis, Mo.] Abstract: The seasonal food habits of *Anolis limifrons*, an iguanid lizard, were studied by examining the stomachs of 512 individuals collected on Barro Colorado Island, Panama Canal Zone, during three periods. Frequency and length of prey and length of predators were determined. Frequency distributions of different size classes of potential prey were obtained from leaf litter and low vegetation samples. The lizards selected larger size classes of potential prey. All size classes of predators captured the smaller size classes of prey, but the larger prey were taken by larger predators. More female than male lizards had food in their stomachs. There was no wet season-dry season difference in frequency of food found in the stomachs.--Courtesy/ Paul A. Stewart.

Silverstone, Philip A. STATUS OF CERTAIN FROGS OF THE GENUS *COLOSTETHUS*, WITH DESCRIPTIONS OF NEW SPECIES. *Los Angeles County Mus. Contrib. Sci.* 215: 1-8, illus. 1971. [From Biol. Abstr. 53(1), 1972.] *WR 145: 109*
[Los Angeles County Mus. Natur. Hist., Los Angeles, Calif.]

Smith, David Lee. MOVEMENTS OF EASTERN GARTER SNAKES *(THAMNOPHIS SIRTALIS SIRTALIS)* TAGGED WITH RADIOACTIVE COBALT. *Ed.D. thesis, Ball State Univ.* 99 p. 1971. [From Diss. Abstr. Int. B. Sci. Eng. 32(9), 1972.] *WR 145: 109*

Thomson, Olivia H., and Denzel E. Ferguson. Y-AXIS ORIENTATION IN LARVAE AND JUVENILES OF THREE SPECIES OF *AMBYSTOMA*. *Herpetologica* 28(1): 6-9, 4 figs. Mar. 1972. *WR 145: 109*
[Miss. State Univ., State College.] Abstract: Larvae and juveniles of *Ambystoma opacum, A. maculatum,* and *A. talpoideum* use the sun as a cue for Y-axis orientation. Larvae and juveniles trained to a specific shoreline in tanks and released in a circular arena moved toward deep water on the Y-axis up to the beginning of gill reabsorption. During gill reabsorption a bidirectional response occurs. Before emergence onto the shore larvae orient toward land. Juveniles orient inland on the Y-axis. The observed orientational responses are consistent with ecological requirements at different life history stages.

Trueb, Linda. EVOLUTIONARY RELATIONSHIPS OF CASQUE-HEADED TREE FROGS WITH CO-OSSIFIED SKULLS (FAMILY HYLIDAE). *Univ. Kans. Publ. Mus. Natur. Hist.* 18(7): 547-716, 110 figs. + 12 pls. 13 Apr. 1970. *WR 145: 109*

Turner, James E., and Samuel R. Tipton. THE EFFECT OF UNNATURAL DAY LENGTHS ON TAIL REGENERATION IN THE LIZARD *ANOLIS CAROLINENSIS*. *Herpetologica* 28(1): 47-50, 1 fig. Mar. 1972. *WR 145: 109*
[Va. Military Inst., Lexington.]

Vinegar, Allen, Victor H. Hutchison, and Herndon G. Dowling. METABOLISM, ENERGETICS, AND THERMOREGULATION DURING BROODING OF SNAKES OF THE GENUS *PYTHON* (REPTILIA, BOIDAE). *Zoologica* (New York) 55(2): 19-48, 24 figs. + 2 pls. Summer 1970. *WR 145: 110*
[Univ. Mich., Ann Arbor.]

Vogel, Zdenek. UNA NUEVA FORMA DE SAPO DE CUBA (BUFONIDAE). [A NEW FORM OF TOAD (BUFONIDAE) FROM CUBA.] *Poeyana* no. 89. 4 p., 3 figs. 13 May 1971. In Spanish with English summ. *WR 145: 110*
"Bufo taladai jaumei."

Walker, Richard Francis. THE INFLUENCE OF ENVIRONMENTAL FACTORS ON THYROID FUNCTION IN TWO SPECIES OF LIZARDS. *Ph.D. thesis, Rutgers Univ.* 154 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(9), 1972.] *WR 145: 110*
"Sceloporus cyanogenys and *Dipsosaurus dorsalis."*

Watson, R. M., A. D. Graham, R. H. V. Bell, and I. S. C. Parker. A COMPARISON OF FOUR EAST AFRICAN CROCODILE *(CROCODYLUS NILOTICUS* LAURENTI) POPULATIONS. *East African Wildl. J.* 9. p. 25-34, 1 fig. Aug. 1971. *WR 145: 110*
[P.O. Box 15068, Nairobi, Kenya.] Four crocodile *Crocodylus niloticus* populations were examined by aerial photography for length frequency distribution. Those examined were in the areas of the Victoria Nile, the Grumeti River, Lake Rudolf, and the Lorian swamp. Some comments are made on the possible influence of various environmental parameters on present status and trends of the populations.--From summ.

Webb, Robert G. RESURRECTION OF *BUFO MEXICANUS* BROCCHI FOR A HIGHLAND TOAD IN WESTERN MEXICO. *Herpetologica* 28(1): 1-6, 2 figs. Mar. 1972. *WR 145: 110*
[Univ. Tex., El Paso.] Abstract: *Bufo mexicanus* Brocchi, 1879, having a rounded inner metatarsal tubercle, is removed from the synonymy of *Bufo speciosus* and is applied to a highland population of toads in western Mexico. These toads, having dark, but dim, pectoral and ventrolateral pigmentation may be known as *Bufo microscaphus mexicanus*, new combination.

Wiewandt, T. A. BREEDING BIOLOGY OF THE MEXICAN LEAF-FROG. *Fauna* no. 2. p. 29-34, illus. Mar.-Apr. 1971. *WR 145: 110*
[Cornell Univ., Ithaca, N.Y.] *"Agalychnis dacnicolor."*

Wood, Stephen C. METABOLIC RATE OF LARVAL AND ADULT PACIFIC GIANT SALAMANDERS, *DICAMPTODON ENSATUS* (ESCHSCHOLTZ). *Copeia* 1972(1): 177-179. 8 Mar. 1972. *WR 145: 110*
[Univ. Oreg., Eugene.]

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